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ADDRESSES.

CHAIRMAN'S ADDRESS.

Read before the Section of Obstetrics and Diseases of Women, at the Forty-fourth Annual Meeting of the American Medical Association.

BY J. MILTON DUFF.

PITTSBURGH, PA.

Members of the Section of Obstetrics and Diseases of Women in the American Medical Association:—It is impossible to convey to you any idea of my high appreciation of the compliment paid to me, and to the State I represent, by calling upon me to preside over the deliberations of this distinguished and representative body of American physicians.

I should have hesitated to assume the duties of the position if I had not been encouraged by the knowledge of your sympathy, and by the confidence that through mutual coöperation we might make this one of the most interesting, instructive and influential meetings in the history of the Association.

INTEREST IN MEETINGS.

The happy interest evinced in the meeting, by the large number of papers offered from all parts of the country, from men of the highest standing in the profession, is significant of the general zeal for the welfare of the American Medical Association, and of the keen interest taken in the work of this Section. In this connection I may say, that inasmuch as the papers to be accepted for the program were limited to forty, it became my unpleasant duty to decline with thanks quite a number of papers, many of them from my warm personal friends, and from gentlemen whose professional attainments make it an honor to this Association to have had the proffer of their aid.

A DUTY OF THE CHAIRMAN.

The by-laws of the American Medical Association make it incumbent upon the chairman of each Section to prepare and deliver an address on the recent advancements in the branches belonging to his Section, including suggestions in regard to improvements in methods of work.

Unfortunately, in the strict fulfillment of the first part of this exaction, one is confronted with the delicate task of anticipating the major portion of the papers to be read before the Section; there are some general references, however, which I feel I may make with propriety, without unduly entrenching upon the subjects of the papers which will occupy your attention later.

OBJECT OF MEETING.

We meet here to-day, not alone for our individual benefit, but as well for the benefit of our grand and noble profession, and in the interests of suffering humanity. As a representative body the results of our deliberations should be the property of the profession. Our deductions should be reached after the fullest discussion, and the most painstaking research, and then given the widest possible publication. We are expected to formulate principles, to commend certain operative procedures and lines of therapy, and to condemn others. The greater portion of the medical profession think for themselves, and think well; but at the same time the collective opinion of such a representative Association as this is eagerly sought by them.

With all due respect to those who with great labor prepare papers, as a rule the discussions are of as much, if not more benefit, than the papers themselves. It is not right, therefore, that the rich and luscious fruits of discussion should be lost. Except to those of us who hear the discussions, the meeting will be of no more benefit to the profession at large than they would have received had the readers of the various papers remained at their homes, and published their articles in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION without the discussions appended. I therefore emphasize the suggestion of my honored predecessor—that this Section should arrange for the publication of its transactions in permanent book form properly indexed. Our work should be done with an eye to the greatest good to the greatest number, not alone for the present but for the future. It should be a work so accomplished that it will leave behind it "a holy light which will be undimmed and undiminished by the lapse of years."

RETROSPECTIVE AND PROSPECTIVE.

As we to-day stand upon the eminence of "Modern Knowledge" and take a retrospect, we are astonished at the rapid and rugged ascent we have made side by side with obstetrics, gynecology and abdominal surgery, especially during the past decade; we are charmed as we contemplate our present commanding position, and the soul is filled with delight as we compare our restricted environment in the shades below, with the glorious sunshine and the broad vista which now meets our wondering eyes. When we look upward we find there are greater heights to reach and perhaps more rugged paths to tread; but by persistent effort and reciprocal action, we may reasonably hope ere long to come in view of the "Eminence of Perfection."

THE WORK OF THE PAST YEAR.

The work of the past year, while in the way of steady advancement, has not been characterized by much that was unique or peculiarly brilliant and original. Some conspicuous and very noteworthy new operations have been suggested and performed, many old ones have been retired or modified, and some few of ancient origin "phœnix-like" have arisen from their ashes with fair prospect of great popular-

ity. Many matters of vital importance have been discussed on the floors of associations and in the columns of the journals, some of which eagerly await the dictum of this Association.

NEW RECRUITS.

The list of special practitioners in the departments represented by this Section has had large accessions during the past year. A large proportion of these additions are men inspired by professional zeal and ambition; with natural talent developed by special training and hard labor, by several years experience in that school of severe discipline "general practice," while many of them in addition carry the trophies of a post-graduate course. This class are welcomed with a generous spirit to our ranks. We need them. We want just such earnest, energetic, qualified workers. I am constrained to say, however, that a large class of our last recruits are not of the proper caliber. They are hothouse plants of mushroom growth. They have never been in the broad field of experience. Their roots have not grown down deep in mother earth, nurtured by the rains and sunshine of many summers and made strong by the frosts and storms of many winters of active general work. They enter the ranks only to bring obloquy upon specialism and specialists. There may be a few, but very few exceptions to the rule, "college bred specialists in any branch of medicine are not a success." The *true specialist* is a creature of evolution from the general practitioner. I have no hesitancy in saying that any professor or number of professors who encourage their students in the idea that they are competent to walk straight from the college halls into any special line of practice are untrue to the trust reposed in them, and are deserving the condemnation of the profession.

OUR EDUCATIONAL ADVANTAGES.

There has been great cause for rejoicing on account of the almost uniform action on the part of our medical colleges during the past year in increasing the course of study, and in demanding a higher standard of scholarship. Facilities for more thorough and scientific teaching are being adopted, and many of our schools are the pride of the profession and second to none in the world. I wish to call your attention, however, to the fact that in nearly all our colleges the facilities for teaching the other branches of medicine are far beyond those afforded for the teaching and study of obstetrics and gynecology. As a consequence our graduates are not qualified in these branches as they should be.

From the best information I can get after considerable investigation, I feel safe in saying that over 50 per cent. of the graduates in medicine leave the college halls without ever having witnessed a case of labor or having introduced a speculum. If this be true, is it any wonder that the rate of mortality will not down, and that malignant disease so often goes on almost to a fatal termination without its true character having been discovered? Far be it from me to speak of this as a reflection upon the many *worthy* and *true* men engaged in the teaching of these branches. They do the best they can under the circumstances. The reflection is rather upon the "boards of control" who, either through ignorance of the necessity, through parsimony, or from need of endowments fail to provide the proper hospital and clinical facilities.

It is our privilege and duty to demand of all institutions as a reward for our patronage that they employ instructors, not because of any financial or other influence they may have, but because they are competent to impart knowledge in the highest, broadest sense, and having employed them enable them to do good efficient work by providing the best possible facilities for instruction. Professors should be very careful to curb the innate tendency to magnify the importance of the capital operations, and perhaps through them their own ability as operators to the detriment and neglect of minor work. It is not an unusual thing to meet young practitioners who declare themselves not only competent, but willing and anxious to perform cœliotomies, hysterectomies, and cæsarian section; but who are unable to operate for a vesico-vaginal fistula, sew up a lacerated perineum, or to determine the diameters of the pelvis.

OUR LITERATURE.

The literature of the year has been of such variety and character as to suit the tastes of the most fastidious. The standard works given to the profession are of a high character, some of them being perfect jewels of their type. It might not be becoming in me to specialize. The journals especially devoted to gynecology and obstetrics are to be congratulated on their increased merit. There has been more care taken in the selection of contributors, and as a rule in consequence the contributions are of a high character and contain more valuable and reliable information. The general medical journals also have given more recognition to the importance of these branches and have produced much of permanent value.

In fact, so much ability, energy and excellence is observable in most of our journals that we hesitate even to offer a suggestion, lest in our inexperience our judgment may be at fault. Without attempting to detract from their excellence we think we are expressing the humble opinion of a large portion of the profession when we say that many of our journals might become more effective, more dignified and more elevated in tone if they showed more of the personality of the editor. The absence of leading articles or editorials in some of our journals is, in the minds of many of the profession a great defect. The position of the editors naturally indicates that they are men of broad minds, and capable of forming comparatively correct opinions upon the topics embraced in the columns of their respective journals.

It is, therefore, due their readers that they give them the benefit of their discriminating judgment. This course is the more necessary because of the character of many of the journal articles. I have said there has been a great improvement in the past year but there is still room for greater improvement. Too much of our literature still comes from those seeking notoriety, and not from those who forget self in their earnest efforts to advance the interests of the profession. The young should be encouraged to observe and to write. Their fresh and pithy articles glowing with the ardor of youth infuse them with much that can be read with zest and benefit. The tendency on the part of some, however, to draw from the realms of their imagination should be curbed in order that their usefulness may not be effaced, or that they may not be misleading or productive of untold harm.

The tendency to exaggeration is not confined to the younger element alone; my strictures are perhaps equally applicable to some whose hairs have grown gray in the practice of their profession. Those, either young or old, who belong to the above category should as far as possible be excluded from among the contributors to our journals. Therefore, the greater necessity for discrimination and a knowledge of the standing in the profession, by the editor, of those who offer their productions.

While the young should be encouraged to observe and to write, the old who are rich in experience, trained in observation, should be impressed with the fact that they owe it to themselves, to the profession and to the world, to publish the winnowings from their storehouse of knowledge.

OPERATIVE WORK.

The solicitude of many with regard to the operative mania which took possession of our profession during the past few years was not without cause. We think no one will have the temerity to deny that there has been, and yet is at the hands of some, too much indiscriminate, useless and ofttimes reckless abdominal, gynecic and obstetric surgery. The past year has witnessed a great improvement in this direction; in fact, now that a reaction has set in the tendency will be toward the opposite extreme. While we should not encourage "the doing of evil that good may come," the operative craze from which individuals perhaps suffered, was productive of great good by offering an opportunity to analyze symptoms in connection with diseases of the pelvis, and thereby elicit much invaluable knowledge which otherwise must forever have lain hidden from view.

If all would adopt the principle that the *éclat* of immediate results should never cause a sacrifice of a careful analysis, nor of an exact determination of the diagnosis and prognosis, we would seldom fail to have a proper interpretation of the indications in each given case and thus relieve us of all anxiety for the future. There are now and will be, no doubt for a long time at least, many mooted points with regard to operative procedure. The difficulties will by and by be eliminated, and while other nations with pardonable pride boast of their great erudition, scientific lineage and great masters in surgical technique, may we not confidently hope that with his independence of character, high aims, noble purposes and exalted ambition, his natural tact, talent, energy, skill and genius, the American surgeon will do his full share in satisfactorily solving these intricate problems? Looking forward to the highest possible attainments we must be careful not to be stranded by misdirected zeal. The tendency to drift into ultra radicalism on the one hand, and radical conservatism on the other, must be guarded against. Personal ambition must remain secondary to the great purpose to be accomplished, personal animosities and jealousies must be covered up and professional harmony and unity of action sought for. While we should give proper honor and respect to the beacon lights in the profession, there should be no want of activity in personally searching for new truths, nor should there be an undue subserviency to the principles enunciated by those whom we delight to honor. Independence of thought and action is not inconsistent with love and friendship for, and fealty to our honored masters, and will best subserve us in attaining that high degree of excellence I trust we all so fondly hope for.

CANCER OF THE UTERUS.

Few diseases are more prevalent than cancer of the uterus, and none was formerly more universally fatal. There is now a very general consensus of opinion that it is a disease of local origin, and not as formerly supposed a general disease with a local manifestation. In 474 hysterectomies at the hands of five different operators, there was a primary mortality of only 8.4 per cent., and at the end of two years of 56.25 per cent.; of eighty-two vaginal hysterectomies done by Leopold, the patients were living without a recurrence of the disease. Such statistics as these supported by a vast array of others almost equally convincing, justify us in stamping hysterectomy for uterine cancer as a legitimate operation, and the disease for which it is done a curable one. A case in which the disease has invaded the parametrium is incurable and therefore not an operable one. The fact that near 90 per cent. of the cases presenting at our clinics are inoperable is very significant, and suggests to us that the most important question in the whole matter to-day is the early diagnosis. The weighty responsibility here rests upon the general practitioner. I feel, therefore, that I should be remiss in my duty at this time if I did not call particular attention to the subject, and urge in the most emphatic manner upon the general practitioner the necessity of his thoroughly familiarizing himself with the early manifestations of this dread enemy of womankind.

THE GYNECOLOGICAL TREATMENT OF THE INSANE.

One of the most important of the live topics during the year has been the gynecological treatment of the insane. I will not insult the dignity and intelligence, nor impugn the motives of the members of the profession who are specially interested in this work, by offering an apology for any attempt on their part to invade the asylums for the insane, with the purpose of promiscuously spaying by the wholesale for the cure of insanity. That such an idea was ever entertained seriously by any one I can not think. Such a course would be so ridiculous, and so preposterous that we can scarcely understand how some of the "boards of control" and even a few of our medical journals seemingly entertained this untenable notion of the intention of those advocating the gynecological treatment of the insane. Their position can only be explained on the ground of a misapprehension of the facts. Certainly, no one has yet sufficient favorable data to justify him in becoming an enthusiast upon the cure of insanity by a resort to oöphorectomy. The intimate relationship, however, existing between the brain and generative organs would rationally lead us to infer that in women predisposed to insanity disease of the latter might be an exciting, if not a direct cause of mental alienation in some cases. That this inference is not purely theoretical and without foundation in practice, we have absolute proof in the results of a number of the operative procedures undertaken only after the most painstaking investigation by Joseph Price, Alice Bennett, W. P. Manton, J. B. Murdoch, Geo. H. Rohé, C. C. Hersman and a number of others whose integrity and ability are patent to all. How rich a harvest might await us in this vast, interesting and complicated field if properly cultivated I do not

pretend to say. The grand object to be accomplished we think justifies us in asking that proper facilities for investigation be afforded those competent to do the work. Of course whatever is done should be with the greatest circumspection. Those who undertake it must remember that they have ignorance on the one hand and prejudice on the other to contend with. 'Tis' said, you know, and truly too, "Prejudice and Ignorance are tough combatants who too often push large minded Ability into the ditch." Aside from any specific operation for the cure of insanity, there is another phase to the question which I feel imperatively demands the unequivocal support of this Section. I refer to operations for the relief of physical suffering among insane women. It is unnecessary for me to occupy time by entering into an argument and citing statistics and clinical facts to prove to you a fact you are all familiar with, that a very large proportion of the insane women in our hospitals are the victims of disease of the uterus and annexa or of both. In consequence they suffer physical pain to a greater or less extent; some of them we have reason to believe suffer untold agony and thus increase their mental anguish. Insanity is not a panacea for pain. Insane women are just as susceptible to, and suffer as much from it, as the sane. In view of this fact does not humanity demand that they at least be given the same chance for relief that is given to their more fortunate sisters, who mentally sound are subjects of the same bodily affliction? Are these poor women to be compelled, in this enlightened age, to forego all the benefits to be derived from a scientific treatment of their ailments, and to be condemned to suffer on and on without any effort being made to mitigate their physical pains? In the name of God and humanity, I appeal to you and to an intelligent public and ask you is it right, is it just, is it Christian-like, is it human? A prominent attorney connected with the board of one of our asylums has said, "We have no legal right to mutilate an insane woman by the removal of her ovaries," and that "a woman recovering her reason finding that she has been so mutilated, might have recourse to law in a suit for damages against the physician who had operated on her." This may be good law and I have no doubt it is, coming as it does from such eminent authority. I have doubts, however, about its justice. I believe that society has some rights in law which are above and beyond the rights of the individual, and I want to say just here on my own responsibility, not as the exponent of the opinions of this Section, that it is extremely doubtful if it is not a crime against society to permit any man or woman who has been a sufferer from chronic insanity to procreate the species, and thus run the grave risk of adding to our insane population, or to the hordes of criminals who infest society. This leads us to say that as the conservators of the physical welfare of the human race, it is our duty to call attention to the disastrous results of illy advised and incompatible marriages; to the necessity of the copulative act being performed only during the best possible physical and mental condition of both the prospective father and mother.

CRIMINAL ABORTIONS.

The alarming increase in the number of criminal abortions with all the physical, moral and social evil it entails is a subject which demands the serious attention of the profession, of moralists and humanitarians. It has been suggested that in order to reduce the physical wrongs engendered by the performance of this operation by irresponsible incompetents, that the regular profession engage in it in a scientific manner.

Let the blush of shame mantle the cheeks of those who suggest this prostitution of our noble profession in the furtherance of such a pernicious crime against God and society. As a profession we have no right to assume the position of lukewarmness and of masterly inactivity in this matter. It is our duty to be aggressive and as far as in our power educate the public up to a thorough appreciation of the pernicious results of this evil. Whenever opportunity offers to detect in this fiendish work those whose names blacken the lists of our profession we should see that they are stamped as villains, and as speedily as possible brought to justice.

PUBEOTOMY.

The revival of pubeotomy with results far more favorable than the fondest expectations of its most sanguine supporters led them to hope for, bids fair to revolutionize some of the operative procedures in obstetric practice. If the present satisfactory results are maintained, embryotomy will be relegated to history, and the earnest pleadings on behalf of the relative rights of the mother and of the child will no longer be heard on the floor of the medical associations, nor occupy prominent space in the journals. It is yet too early to make any radical assertions, but the probabilities are that all will lay down their past differences upon craniotomy and embrace an operation which is more humane, inasmuch as it gives every possible chance to the child and does not increase the danger to the mother. Pubeotomy is not applicable to all cases of deformed pelvis; we do not hope without good reason, however, that it will be efficacious in all cases in which craniotomy could have been performed with a reasonable degree of success. It will also be proper in all cases where delivery could have been procured by producing premature birth at the seventh month. It will not therefore only supplant embryotomy, and the necessity for the production of premature delivery, but within the same limits of pelvic contraction also do away with the more hazardous operation of cæsarean section in the hands of those who elect to save the child.

PLACENTA PRÆVIA.

The work of the past year has shown the utter absurdity of assuming the position of watchful expectancy in placenta prævia. To those who have been watching the trend of events I need offer no arguments to sustain the position that placenta prævia should be considered as a malignant condition, and should receive early and prompt treatment while the physician is in a position to control rather than be controlled by events. The method generally adopted is dilatation and delivery per *vias naturales*—but cæsarean section is now being warmly advocated by some men as giving greater chance to both mother and child. Time and experience will have to determine which method is productive of the best results.

PUERPERAL INFECTION.

The reports of the year from the hospitals in our own and foreign countries show a very gratifying result so far as deaths from puerperal infection are

concerned. In scarcely any does the death rate go above 2½ per cent. and in some it is *nil*. I have no means of gathering general statistics from private practice, and have only been able to get the isolated statistics of a few cities and of a few general practitioners, which justifies me in saying that the rate of mortality from this cause is much higher in general than in hospital practice. It is only a few years since the very converse of this was was true. Why is this? Need I stop to say that it is because of the hospital practice of to-day being the more scientific? This opens up a wide field for thought, and should stimulate the general practitioner to greater efforts as far as possible toward the institution of strictly scientific midwifery in private practice. It may be impossible with the disadvantages of untrained nurses and environments over which we have no control to obtain as good results in private as in hospital practice. With the education of the laity upon the necessity of sepsis and good hygienic surroundings, the employment of trained nurses when possible, and the adoption on our own part of all possible precautions against infection, we could at least approximate the high standard set us by the hospitals. There are many more subjects to which I might refer. Among those of which I more particularly wished to speak were: The danger from and uselessness of curettage in many of the diseases of the pelvic viscera; the necessity of calling architects to our aid to secure the construction of sick rooms in our homes which would meet the demands of modern surgery and therapy; exploratory abdominal incisions are not free from danger and should be made with great circumspection; the significance of puerperine in the kidney (discovered by Brown-Séquard); the proper application of the terms, laparotomy and cœliotomy (Harris); the aseptic treatment of the umbilicus in the newborn, a preventive of trismus and other diseases of the child; the communi bacillus, a factor in auto-infection in the puerperal woman especially in connection with suppurative hemorrhoids; the septic cord a cause of infection of the mother; the necessity of the systematic care of pregnant women; pelvic troubles due to movable kidney (Theiran). All of these topics are sufficiently suggestive.

In the selection of our program, however, we have endeavored to have all the leading subjects represented. Without taking up more of your valuable time and with the earnest hope that our meeting may be harmonious, that new and warm friendships may be formed, that old ones will be more firmly cemented, and that the work of the Section will be of such high order that it will be an enduring monument to the memory of those composing the Columbian meeting of the Association, I now declare the Section open for the transaction of business.

Dr. J. B. Moffett, for more than thirteen years a resident of Minneapolis, died at Minneapolis recently. He had been in failing health for more than a year, and was finally carried away by an attack of congestion of the brain.

Deceased was a native of Kentucky, where, in Bath county, he was born Dec. 4, 1820. He was graduated from Rush Medical College, Chicago, and removing from Kentucky located for the practice of his profession in Iowa county, Wis., in 1846. There he practiced medicine and surgery until 1880, when he removed to Minneapolis in the fall of that year. In 1884 he discontinued active practice, and has since lived quietly, devoted to his family and to Masonry. In this he was a Sir Knight, member of Zion Commandery. He leaves a widow and seven children.

ORIGINAL ARTICLES.

THE PRESENT STATUS OF THORACIC SURGERY.

Read in the Section on Surgery and Anatomy, at the Forty-fourth Annual Meeting of the American Medical Association.

BY J. McFADDEN GASTON, M.D.
ATLANTA, GA.

In comparing the conditions of surgical resources of former days with the operative measures adopted within the last decade, we can recognize the great advances made in surgery of the chest. It is to be noted, however, that many procedures are yet *sub judice*, and that the appliances that some have resorted to are not to be considered as established processes of relief for troubles in the thoracic cavity. Decided progress has been made in curative measures, yet there is much to be accomplished in fixing finally the rules which shall govern the surgeon in treating the disorders of the chest.

Those who have kept abreast of the literature of thoracic surgery will not be taken by surprise when it is stated that even the mode of dealing with wounds of the parietes of the chest is a mooted point. While the weight of authority is favorable to closing incised or gunshot wounds of the walls of the thorax, there are advocates for laying open freely all the parietal structures in traumatic injuries of the chest walls attended with internal hemorrhage. The statistical records in favor of masterly inactivity in the treatment of foreign bodies in the air passages, is gradually giving way to active interference. Yet the experimental observations upon the results of operations for reaching the bronchial tubes directly through the walls of the thorax, afford little encouragement for these heroic procedures. It doth not yet appear what is to be the fate of early aspiration in serous pleural effusions, as a reaction has manifested itself in favor of medication, bloodletting and blisters in these cases.

A plea for early removal of pleuritic effusion is presented by Gardinier, not waiting for the subsidence of fever or the eliminating power of drugs. In twenty cases under his care within five years, all except two have done well under this course of treatment by early aspiration. A salutary result of aspiration is reported by Ernest Anacker and also by E. M. Jenkins. A case of chronic hydrothorax is reported by H. F. Twitchell, in which repeated aspirations and injections of tincture of iodin into the pleural cavity were attended with a satisfactory result. Two cases are described by J. H. Cox, one being aspirated with good effect, and the other from neglect of this procedure terminated in pointing and spontaneous discharge through the chest wall about the seventh interspace. This was followed by a second pointing a month later about the fourth interspace. There was an average discharge of one quart a day for eight months of thick, creamy pus, but in a year afterward this had entirely ceased. This case affords an illustration of the unaided power of nature.

The treatment of a case of pleuritic effusion by continuous drainage is reported by Baskett.

Aspiration was at first performed in a middle-aged man, drawing off forty-four ounces of serous fluid, and it was repeated seven times, the amount varying from two to six pints. It was then determined to employ continuous drainage, and an incision was

made in the fifth space in front of the axilla and a drainage tube was left in the opening. The discharge was very great, with expansion of the lung, and the breathing could be heard. The fluid became purulent in the course of three weeks, but gradually diminished and in four months the discharge ceased. The wound finally healed and the patient was soon restored to health.

This is a unique case in the departure from the ordinary course of treatment for serous effusion in the cavity of the pleura; and it will be noted that the collection assumed the character of empyema, as it is prone to do after repeated aspirations and subsequent closure of the opening into the cavity.

In hydrothorax, Anders draws attention to the change in the upper limit of dullness due to the position of the patient, as the physical sign of most importance in diagnosis.

He reports the case of a man aged 66 years from whose chest sixty ounces, seventy ounces and eighty ounces of fluid were withdrawn by aspiration at different times with decided improvement. He gives another case in which the diagnosis was confirmed by the use of the hypodermatic needle and the patient was treated successfully by the internal use of the so-called iodides. He states that in nearly every instance in which the double iodides have been used, thoracentesis has been unnecessary. Active medication in the outset of pleural effusion is urged by J. C. Thorowgood of London, noting that rapid absorption followed the use of salicylate of sodium in seventeen out of twenty-seven cases. Lindsay has relied upon counter-irritation and iodide of potassium, with the addition of the ammonio-citrate of iron, in the early stages, but aspirates if the effusion is large.

All concur in removing large accumulations of fluid after various modes of internal treatment have failed to give relief; yet the conditions for this procedure, in the view of many having ample experience, indicate an apprehension of consequences which may be averted by energetic measures of treatment by medication at the outset.

The development of pneumothorax, either spontaneously or from traumatism, has been met by two distinct processes, one being by aspiration of the chest, so as to take away the superfluous air, and the other by the introduction of the innocent solution of boric acid or chloride of sodium by a canula while another alongside of it allows the air to escape from the thoracic cavity. Thus the space previously occupied with air will be filled with the fluid to be removed by syphonage or which in due course of time is absorbed. Of course perforations of the lung will be reduced in size by the partial collapse from the outside pressure of the fluids.

Hodenpyl recently presented to the New York Pathological Society two specimens of perforation of the lung, followed in a very short time by death. On opening the right side of the chest at the autopsy of one of the cases, gas escaped. About the middle of the upper lobe a circular perforation one-eighth inch in diameter was found in the pulmonary covering. The entire lung was consolidated and studded with tubercular nodules and there were cavities in the upper lobe. The other patient had been ill for a year and confined to bed for the past two months, yet was engaged in sweeping just before the perforation occurred, and died within a brief period afterwards.

If pneumothorax occur into the relatively sound lung, Fagge claims that its occurrence is apt to be marked by severe symptoms and death speedily follows, but that if the pneumothorax occurs on the side which is the more extensively diseased, the symptoms may not be urgent, and death does not occur speedily or the patient may recover.

Amongst the complications of phthisis, none gives greater concern than pneumothorax, which Samuel West shows to be attended with a mortality of 66 per cent. Sutherland gives the case of a man 32 years old which illustrates the advantages of aspiration. It was resolved to puncture the chest, and air was at once heard to pass into the bottle, and a considerable quantity of air was removed from the pleural cavity, with manifest improvement. On the following evening, aspiration being again performed, at first only air was withdrawn, then air mixed with fluid, and finally nine ounces of clear fluid were evacuated. At the end of a month thirty-four ounces of clear fluid were withdrawn. He then improved rapidly and afterwards continued in good health. The spontaneous cure of traumatic pneumothorax is reported by Bowes, in a man 36 years old. After a fracture of the eighth rib pneumothorax appeared, but next morning there were no traces of it, and the man recovered without any further complications.

In regard to surgical steps for extraction of bodies in the bronchi it may be noted that Buck, in a case where the patient had inhaled the distal portion of a tracheotomy tube, did a low tracheotomy. He was able to feel the tube with his finger, lodged in the left bronchus, and extracted it with suitable forceps. Weir had a patient with a piece of broken tooth lodged in a bronchus, for which he made an opening low down in the trachea. He was enabled to feel the division of the bronchi, and by means of a bent copper wire loop the tooth was dislodged and then extracted with an angular forceps. A most fortunate result of opening freely the lower part of the trachea was the extraction by J. W. Strickler of a plug of gauze from the bronchus when the patient was almost asphyxiated. A tracheotomy had been done for membranous croup with the insertion of a tube, when a piece of iodoform gauze which was used for cleansing out the trachea became detached from the probang and passed into the left bronchus. After dividing the skin down to the sternum the trachea was opened to the bifurcation, and the plug extracted.

On the other side of the question De Forrest Willard's experiments militate against the operation through the chest wall for the removal of foreign bodies impacted in the bronchi. His experiments on dogs thus far tend to prove: 1. That collapse of the lung on opening the thorax, when the lung has not been crippled by disease, is an exceedingly serious and dangerous element, adding greatly to the previous shock and threatening at once to overpower the patient. 2. The difficulties of reaching the bronchus, especially upon the left side, are very great and the risk of hemorrhage enormous. 3. Incision into the bronchus necessarily leads, after closure of the chest wound, to increasing pneumothorax with its subsequent dangers. 4. The delays in the operation from the collapse of the patient must necessarily be great. Rapid work is impossible when the root of the lung is being dragged backward and forward at least half an inch in the efforts occasioned by air-hunger, and precision is almost impossible. 5. To reach the bron-

chus is feasible, but to extract a foreign body is highly problematical for securing recovery.

Hydatids of the lung have come under surgical treatment somewhat frequently of late, and the outcome of operations for hydatid cysts by thoracotomy and pneumotomy gives encouragement to these procedures.

Independent of the observations upon cases of various kinds in human subjects, extended investigations have been made by experiments upon inferior animals which are calculated to shed some light upon thoracic surgery. Among these may be noted the experiments in pneumotomy and pneumonectomy, with suturing of lung, by Dr. De Forrest Willard of Philadelphia, which have been reported in full, but my space only admits of giving the results.

1. In thoracotomy and in bronchotomy the entrance of air into the pleural cavity is a far more serious matter, as regards the collapse of the lung and of the patient, when the lung tissue is normal, than when it is diseased or already crippled. 2. Incision into the substance of the lung, with removal of a portion, is well borne by dogs. Hemorrhage, though free, is not fatal, and can be arrested by packing. 3. Adhesion of the parietal and visceral layers can be readily obtained by sutures, and the resulting pleurisy is slight. 4. Surgically, these experiments point out that similar adhesive inflammation can be secured and thus permit safe incisions into tubercular or other diseased lung tissue, without infection of the pleural cavity. 5. A lung can be drawn into the wound and sutured outside of the pleural cavity. Pneumonectomy for gangrene or abscess of the lung offers better results than is possible in cases not treated surgically.

Some developments in the topography of the fissures of the lung, as a guide to transcostal openings, have been made by Eugene Rochard of Paris, which ought to aid in the treatment of abscess of the lung and interlobular pleurisies. His paper is illustrated by fifteen figures, showing these fissures under varying conditions in the dead subject and also the average tract of the interlobular fissures in the skeleton, including the fifth and sixth ribs.

In selecting a point for the introduction of a trocar in the anterior portion of the thorax, Jacoud of Paris considers that the region of Traubé on the lower part of the left side, of a semi-lunar shape, is the most favorable for puncture. It is the site which is least liable to complications with the diaphragm, pleura and abdominal wall, and there is less risk of encountering adhesions than in any other portion of the anterior region of the chest.

He finds it above the fifth or sixth left costal cartilage, extending backward to the anterior extremity of the ninth or tenth rib. A trocar may be safely introduced on the posterior aspect of the chest, as low down as the eighth intercostal space, but if inserted on a lower line is likely to enter the abdominal cavity; and an incision has actually been thus made between the diaphragm and the liver, which had to be closed by sutures before making one above.

In the various operations upon the cavity of the thorax there has been quite a marked diversity of opinions and a difference in practice as to the subsequent washing out of the pleura. While some have resorted to free irrigation and even to the use of medicated solutions, with apparent benefit, others have found these measures hurtful; and a considerable number of operators do not employ interpleural washes except in cases of contamination requiring correction.

On the other hand, some cases have been recently reported by Laplace in which the pleural cavity has been packed with gauze from day to day, with the claim that it contributes to the comfort of the patient and promotes the filling up of the space by granulations springing from the pleura.

As an intermediate step, semifluid substances, such as iodoform with glycerin, have been deposited in the pleura for the relief of tubercular degeneration with satisfactory results.

This general review of the different phases of thoracic surgery will not be complete without some details of the operative measures in each department.

In wounds of the thorax accompanied with internal hemorrhage, Axford has insisted upon free incision of the thoracic wall for the removal of the blood. But admits that he would not recommend this procedure in all cases, considering only those suited to it, in which there were immediate indications of copious bleeding and risk afterwards of decomposition of the blood mixed with air in the pleural cavity. Touching this position, Schmidt held that free incisions would produce an open pneumothorax, as only in cases having the lung wounded is this course proposed. He thinks that the favorable effect of the blood pressure upon the lung would be lost by removing it. The course adopted in most of these cases is to allow the blood to flow out, by placing the wound in a dependent position, and then close the opening by suture.

In gunshot wounds of the chest, Gehrmann enjoins that the margins of the skin are to be cut smooth and stitches introduced. Albert says there is but one rational means of closing wounds of the thorax and that is by suture. Hemorrhage is immediately stopped and infection from the skin is avoided by the rapid union of the co-aptated margins of the wound. The extent of the injury is known by the anatomical relations and by physical examination of the patient, and not by probing the cavity.

A case is reported by McClintock of gunshot wound of the thorax in a young lady and the cavity of the pleura was two-thirds full of blood. The use of occlusive dressings for the two bullet wounds secured union without suppuration, and an examination five months afterwards showed that the patient was perfectly well and there was no dullness over the region formerly filled with blood.

The literature pertaining to gunshot and incised wounds of the chest, affords numerous illustrations of the advantages of hermetically closing the openings.

A few years ago it was thought that a most desirable consummation had been reached by Estlander's operation in empyema, but to-day serious misgivings are entertained by the conservative surgeons of America and in Europe as to its applicability, except in extremely rebellious fistulous openings of the thorax.

The employment of efficient drainage, with or without resection of a small portion of a single rib, is held by many of the most experienced operators to meet all the needs of purulent collections in the pleural cavity, and that more extended resection of the ribs should be limited to abscess or gangrene of the parenchymatous structure of the lungs.

A recent departure from the established routine has come to the front in the amputation of small segments of the lung, when unfitted for performing their functions. But the few cases in which this operation has been performed affords no criterion for deciding upon the merits of this bold procedure.

In connection with the heart and pericardium Koerte describes a case of pericarditis with exudation, in which a puncture was made in the fifth intercostal space.

After resection of two inches of the fifth rib the pericardium was opened and about a quart of thin, purulent fluid was evacuated. Upon enlarging the opening, the cardiac movements could be distinctly seen, and the organ bore the washing out and disinfection without any marked disturbance. A case of hemorrhagic pericarditis, with serous effusion in the right pleura, is reported by Churton, in which he performed aspiration of the pericardium thirteen times and paracentisis of pleura seven times. The patient survived more than a year.

A needle was extracted from the pericardium of a boy 15 years old by Dziembowski and improvement followed without any complications. The murmur connected with the heart's action, which could be heard at some distance from the chest, disappeared immediately.

The invasion of the pericardium by the surgeon, not simply by puncture, but by free incision and the use of drainage tubes in the sac, promises satisfactory results, and has well nigh attained a place among the established processes in surgery.

A field of great interest, which has to be entered with much precaution, is that of the mediastinum, and though abscesses in this region have found spontaneous outlets with relief to the patients, there has little thus far been accomplished for the removal of tumors from this region. The graphic accounts of such neoplasms have been furnished by autopsies, and only a rare instance of the removal of a mediastinal tumor during life has thus far been reported. The initiative spirit of aggressive surgery, will no doubt inspire some intrepid explorer to penetrate this dark domain of disease, and we expect at no distant day to hear of important discoveries in this region, which may be yet crowned with good results.

A bold procedure for reaching the posterior mediastinum has been undertaken by Quenu and Hartman. A vertical incision, six inches long over the angles of the ribs, between the spinal border of the scapula and the vertebral column, about four fingers' breadth from the spine, is made so that the middle of the incision corresponds to the spine of the scapula. The ribs are then divided and resected for about an inch. The small resection of three ribs permits the hand to penetrate into the posterior mediastinum by stripping off the pleura. The opening in the thoracic wall extends from the inferior border of the second rib to the superior border of the sixth. By retraction of the ribs it is possible to see and explore the hilum of the lung, the aorta and that portion of the œsophagus which extends from the root of the bronchus to the diaphragm.

If the pleura instead of being stripped off is incised, the upper lobe of the lung and even the summit of the thoracic cavity are easily accessible, and the authors claim that it is better to approach the mediastinum from the left side than from the right. Weir has recently repeated this operation on the cadaver and found that the left bronchus could be easily reached.

Quenu and Wagner adopted a process of separating the ribs by lateral section and making an incision through the soft parts on either side and below, while the upper line of attachment is left undisturbed.

Thus a kind of trap door is made into the thorax, admitting of observations of the contents and the employment of any mode of procedure which may be indicated.

While Estlander made the original suggestion, Quenu first performed the operation.

G. Richelot has since peformed it on the 16th of March, 1891, affording relief in an extensive empyema, giving full credit to Quenu by styling the operation, Quenu-thoracoplastie. Moreau performed the same operation three times subsequently.

Delorme of Paris, in reporting recently a substitute for Estlander's operation, seems to have ignored the work of Quenu and others in the same line, and adopted a procedure upon the same principle, with a modification, which presents no superiority in practice.

The process described by Delorme consists essentially in the formation of a flap from the soft parts of the thoracic wall and the ribs, which when retracted, affords wide access to the field of operation. After the completion of the operation the flap is replaced and sutured to the thoracic wall. The flap is formed as follows: an incision, representing the three sides of a rectangle, is made in the region between the third and sixth ribs. The base of the flap thus formed is directed posteriorly and above, and its upper and lower margins run parallel with the ribs, and extend from the axillary border of the scapula to within two fingers' breadth of the sternum, At the anterior margin of this flap, the ribs and intercostal muscles are severed, while at the posterior margin only the ribs are divided to a limited extent. The flap is then loosened at its upper and lower margins and thrown back. This operation has been employed by Delorme in tubercular abscess of the chest wall, which perforated into the thoracic cavity.

Following in the wake of Zackharevitch, whose experiments of thoracotomy resulted fatally in only two out thirteen operations performed on nine rabbits, W. Lemoyne Wills of Los Angeles, has experimented on twenty rabbits, making twenty-seven operations, as follows: ten pneumonectomies, three thoracotomies, four attempted pneumonectomies with lacerations of lung, and chest packed with gauze; eight sutures of lung, three primary operations and five secondary; one pneumonotomy.

Apart from one death, caused by the anæsthetics, and two from shock within one hour, there were few fatal results following directly from the several operations. In giving the average duration of life, including those killed for verifying effects, the time in pneumonectomies is thirty-two and one-third days; in attempted pneumonectomy twenty-seven and seven-one-hundredths days; in thoracotomy forty-four and two-thirds days; in suture of lung to chest wall, primary operations forty-four and two-thirds days; secondary fourteen and three-fifths days.

The author remarks upon these cases, with evident satisfaction: "If the results are as good as this in rabbits, how much more can be expected in man, by intelligent coöperation?"

We cannot as yet give a satisfactory reply to this question. But it is demonstrated by clinical observation upon the human subject that diseased structures of the chest, as in other parts of the physical organism, are more tolerant of surgical interference than in traumatism of the contents of the thorax in their normal condition. It is therefore inferred that the operation upon the thoracic walls and upon the tissues of the lung under abnormal conditions which are indicated, will be warranted in all such cases as have proved safe in the experiments upon dogs and rabbits.

On the other hand it is not a necessary consequence that operations upon the diseased structures of the chest in the human subject shall prove hazardous, because experiments on inferior animals in a healthy state have been unsatisfactory or have turned out unfavorably.

A considerable portion of the data here presented has been the result of my collection of materials for the department of thoracic surgery in the *Annual of the Universal Medical Sciences* during the past four years, and I would refer all who may be interested in this matter to my contributions in Vol. III of each issue, for all details, with the report of numerous illustrative cases under each head of thoracic disorders. Attention is directed especially to the forthcoming issue of the *Annual* for the current year.

It will be found that there are facts presented which lead to different conclusions, and that the practice in like cases has varied widely. But the student who seeks guidance from the experience of others must exercise his judgment in selecting the safest and best plan of treatment after comparing the results obtained by different observers in each case.

The following general inferences may be drawn from the facts:

1. All penetrating wounds of the thorax may be closed hermetically, by suture or otherwise, after allowing the discharge of fluid blood from the opening.

2. Foreign bodies lodged in the bronchi may be removed by incision of the trachea at the lowest available point.

3. Experiments for reaching the bronchi through the chest wall, afford little encouragement in undertaking operation upon the human subject.

4. Medication as a preventive and a curative agency in pleuritic effusion is worthy of trial, before proceeding to the recourse of aspiration.

5. Aspiration is indicated when there are large serous accumulations in the chest and likewise in pneumothorax, but cannot be relied upon for the relief of purulent collections.

6. Partial resection of ribs is attended with better results in some cases of empyema than the complete removal of the segments of several ribs.

7. The excision of a small portion of one rib with the introduction of drainage tubes has been generally attended with good results.

8. Washing out the cavity of the chest is not requisite, except in contamination and decomposition of the contents.

9. The operation of thoracotomy for abscess and gangrene of the lung, should be accompanied with antiseptic applications and with tamponage gauze.

10. Tumors of the mediastinum may admit of interference, but further developments are requisite.

ARTIFICIAL OPENING OF PULMONARY CAVITIES, INSERTION OF RUBBER TUBE AND INJECTION OF CHLORINE GAS.

Read before the Section of Surgery and Anatomy at the Forty-fourth Annual Meeting of the American Medical Association.

BY E. L. SHURLY, M.D.
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Mr. President and Gentlemen:—Being a physician, I owe this assembly of surgeons an apology for appearing with a surgical paper. For I know full well that physicians, as a rule, are as incompetent in the practice of surgery as most surgeons are in the practice of medicine. Therefore it is with some hesitation that I venture to submit the following observations and remarks:

The surgery of the thoracic cavity, excepting for the opening of the pleural sac has been heretofore rather forbidden ground, because, as we know, fraught with so many imminent dangers to life. The possibility however, of doing something in a surgical way toward the mitigation or arrest of the course of disease in cases of pulmonary abscess, either benign or tuberculous has occurred to many during years past. As long ago as 1844 a large apex cavity was incised and a drainage tube inserted by Drs. Hastings and Stork. In 1873 Mossler tapped pulmonary cavities and injected iodized and other antiseptic solutions, and from time to time after this, Cayley, Godlee and others tapped such pulmonary cavities and injected iodized and other antiseptic fluids; again in 1879 Mr. Douglass Powell at Middlesex hospital in London, opened up pulmonary cavities and inserted a drainage tube. Since then such efforts have been made at long intervals but with indifferent results only. In later years attempts have been made to excise diseased portions of the lung but always with fatal effect I believe. This latter practice originated from the encouraging results obtained from several experiments made upon the lower animals, in which the thoracic cavity was opened freely, portions of the lung first ligated, and then excised, without producing the immediate death of the animal. It has been observed that nature once in awhile brings about a discharge externally of the contents of pulmonary cavities through the process of ulceration to the surface.

A notable case of this kind was recorded in 1843 in the London *Lancet*, occurring in a man who lived a number of years afterwards. Other cases of the sort have been reported from time to time, and similar results have been recorded in cases of pulmonary abscess in connection with pyopneumo-thorax and empyema.

For this reason it has for a long time been my conviction that we would be justified in applying our art in imitation of nature in order to bring about such results. However, the difficulties besetting the undertaking are not to be treated lightly; of which I will mention first the difficulty of determining with certainty the location of cavities, and the distinguishment of pulmonary excavations from locular collections in the pleura cavity, or of distinguishing bronchitetic cavities from others. I believe it well nigh impossible with certainty to determine the perspective, so to speak, of a pulmonary cavity; that is, whether it be a half inch, or two or three inches from the surface with or without much intervening

pulmonary parenchyma. And it will readily be seen that this is an important point, inasmuch as the cutting through pulmonary tissue in getting to a cavity, opens up two sources of danger; one from hemorrhage, and the other from infection by the contents of the cavity coming in contact with freshly incised surfaces of lung tissue, upon which are exposed open lymph vessels or spaces.

The immediate dangers from hemorrhage, shock and consequent septicemia are not to be overlooked in undertaking such operations, notwithstanding the protective influence afforded by the modern methods of aseptic surgery. Besides these we must not forget the consecutive accidents to the nervous system such as convulsions, chorea, paralysis, meningitis, etc., which frequently follow operations on the chest, according to Auboin, Cayley, Weil, M. Roupert and others. At the Congress on Tuberculosis of 1891, held in Paris, Paul Poirier and Jonnesco presented a valuable paper on the treatment of pulmonary cavities at the apex of the lung, by incision, drainage, and subsequent disinfection with antiseptic fluids. In this paper they reported twenty-nine cases of such operations having been made which resulted in the amelioration of the condition in fifteen cases, cure in four, immediate death in nine and one result not stated. Their method of procedure consisted in making free incisions, by preference at the second intercostal space (without resection of the rib) down to the pleura, aud thence entering the cavity with the thermo-cautery knife. In the cases which I shall briefly present for your attention their method of operation was pretty closely adopted. Although the signal failure of these operations as hitherto recorded, would lead one to hesitate upon the adoption of such means, it occurs to me that the two great causes of failure may be traced to the use of the knife instead of the galvano-cautery or thermo-cautery for making the opening through the pleura and lung, and to the injection of fluids; while a third might be added, consisting of the opening into a free pleural cavity.

Dr. Gibbes and myself have demonstrated to our own satisfaction that chlorine gas is capable of entirely destroying the virulence of tubercle or caseous material whenever the same has been properly exposed to it. Therefore it occurred to me that this agent would be the most desirable one for introduction into a pulmonary cavity providing it could be tolerated; not only for its immediate local effect, but also because of its gaseous nature fitting it to reach not only all of the adjacent diseased parts, but possibly the remote parts of the lung, thus providing a complete plan of local aseptic medication. The question, therefore, would seem to hinge upon some practical method of its introduction. We know by experience that it requires persistent effort on the part of the patient to inhale a sufficient quantity by the natural way to even secure a limited action upon the caseous surfaces exposed to the inspiratory current, and that its introduction is resisted by the glottis. I therefore felt justified in testing its adaptability in this way as soon as opportunity offered. The method pursued in the cases that I shall briefly report was as follows:

After anæsthetization by chloroform, an incision with a bistoury was made parallel with the ribs at the second intercostal space from near the margin of the sternum for about two and a half inches carefully avoiding the internal mammary and intercostal arteries; then the muscles were divided by as little incision as possible down to the costal pleura. Having reached the surface of this membrane the bistoury was exchanged for the incandescent galvano-cautery knife with which the pleura and intervening lung tissue was divided, until the cavity was reached. Into the opening a drainage tube (which was previously flanged) and secured to a piece of lead plate or zinc was inserted, the tube being long enough to extend some distance above the surface. The end of this tube was afterwards closed with a plug of absorbent cotton, which was of course removed whenever the cavity was treated. The diluted chlorine gas was obtained by pumping air with a common rubber bulb through a Wolff bottle which had been previously half filled with freshly made chlorine water, and connected by a piece of glass tubing with the tube in the thorax. The air in passing through this becomes strongly impregnated with the gas; and twelve to fifteen bulbs-full can be introduced at a time, and repeated every two to four hours. Contrary to expectation this procedure produced very little uneasiness, and little or no cough. In fact its effect was quite comforting to the patient.

The first case in which chlorine[1] was tried, was a sailor, age 32, who was brought to Harper hospital Oct. 20th, 1892, having suffered fron a severe pleuro-pneumonia, the result of a debauch and exposure. He was very sick for three or four weeks expectorating blood and rusty sputa; suffering from high temperature, rapid pulse and respiration; active delirium and progressive adynamia. He had complained constantly of a great deal of pain in the right side, which required the continual effects of morphine to alleviate. The high temperature, rapid pulse and delirium gradually abated, and on the first of December I was asked to examine him with his attending physician, Dr. Brown. The right pleural cavity was found flat on percussion throughout the lower two-thirds of its extent, and there was but little respiratory murmur at the upper part of the right side of the chest.

Over the fourth interspace and about three inches from the sternum it was discovered that air was passing from the lung into the pleural cavity. At least it could be heard distinctly, accompanied by mucous râles. Believing that nature had perforated the visceral pleura and that there was possibly ulceration of the costal pleura going on, we decided to make an opening just below the spot which was deemed by auscultation to be the seat of ulceration. The patient was carefully placed under the influence of chloroform and I made an opening with a bistoury in the lower axillary region, and inserted a drainage tube without resecting any of the rib. This was followed by the discharge of bloody pus and sputum and subsequent amelioration of the symptoms. We found that the pus from the pleural cavity was quite thick and thoroughly mixed with blood. He continued to discharge this material by coughing, both through the tube and by the mouth. An examination of the sputum on the 16th of December revealed tubercle bacilli, although none were found in the fluid from the pleural cavity. The drainage tube was left in continuously. He was next

[1] Have since evacuated the pleural cavity of a collection of pus and opened the sinuses.

treated by chlorine gas diluted with air for a period of six weeks and the cavity washed out by peroxide of hydrogen (1 to 10) on two or three occasions.

The patient suffered from persistent cough and the expectoration of bloody sputum for about three weeks,—although this was not caused by the gas. On account of the flowing of sputum into the general cellular tissue he suffered from a series of sub-cutaneous abscesses, five or six of which were opened; some of these were found to communicate with each other by sinuses. These sinuses were probed from time to time but no necrosed rib was found. The opening from the surface into the lung has now healed up. The man looks well, eats well, and breathes well. He walks about freely—going down town, and coughs very little, excepting in the morning. He takes no stimulant or anodyne. There is still, however, considerable discharge from a fistulous opening in the side of the chest near the point of the incision which has to be dressed twice a day.

This was undoubtedly a case of croupous pneumonia, with empyema, such as Dr. Godlee believes to occur more frequently than is generally recognized.

The man having survived the acute stages, nature evidently set about to make an opening for the pent up material.

By opening up the external parts, inserting a tube, and treating the condition as indicated, art simply assisted the accomplishment of nature's design.

The two cases which I am about to relate both died, and they were operated upon very much after the manner of Poirier and Jonnesco:

Case 1.—T. S., Canadian by birth, cook by occupation, married, aged 48. Entered Harper hospital Feb. 4th, 1892, suffering from phthisis pulmonalis, presenting the signs of a small excavation in the upper part of the left lung with considerable hepatization throughout that side.

He remained in the hospital until March 8th, during which time he was treated principally by hypodermic injections of iodin and chloride of gold and sodium and inhalations of chlorine gas. At the time of his discharge he was very much improved, the physical signs showing retrogression of the pulmonary disease. He was heard from occasionally after that as improving, and I believe resumed work, but was taken sick the latter part of November with what was supposed to be croupous pneumonia; and was brought to the hospital again in February of 1893. At this time he was very weak, emaciated, with several good sized cavities in the left lung, also one at the right apex. He suffered from marked hectic fever and considerable diarrhœa. He was treated systematically by various things and the disease for a time was held in abeyance. But later on he gradually lost flesh and strength, and was surely approaching the end. On March 15th, having obtained the patient's consent and that of his friends, I opened one of the cavities of the left lung through the second intercostal space in the manner already stated. The cavity sought for seemed to be quite superficial but was found to be at least two inches from the pleural surface, and cutting through the lung tissue even with the galvano-cautery knife, brought on considerable hemorrhage. The hemorrhage soon stopped, however, but after the insertion of the tube the patient seemed to collapse. We thought he would die on the table. However, hypodermic injections of stimulants were administered at once, and he soon rallied and was immediately taken to his bed wrapped up in hot woolen clothing, surrounded by hot bottles, while the hypodermic injections of stimulants—nitro-glycerin and digitalin, etc. were continued at short intervals until he completely reacted which took place in about an hour and a half. He then expressed himself as feeling very comfortable, in fact better than he had for "a long time." He stood the chlorine gas well, and seemed better, but died on the eighth day after the operation, from a sudden and very copious hemorrhage. On the evening of the 15th of March, the day of the operation, the cavity was drained through the tube, and the introduction of chlorine gas commenced in a manner before mentioned. Chlorine gas was used about every four hours, six to twelve bulbfulls being introduced each time. He never complained of any pain and very little cough was excited by this procedure. He always expressed himself as feeling very comfortable after it. The cough almost entirely ceased; the cavities being drained out occasionally by turning him over to the right side.

The source of the hemorrhage which was the immediate cause of his death was probably the opening of a good sized pulmonary vessel. Whether this was caused by the mechanical irritation of the end of the tube, or the accidental rupture of some old aneurism can only be conjectured as a post-mortem examination unfortunately could not be obtained.

Case 2.—A. M., German, aged 27; tailor; lived in United States eleven years; both parents died of phthisis pulmonalis. He had suffered from cough for six years which he thought resulted from "a cold." Had had several attacks of hemoptysis with exacerbations of chills and fever on and off during this time. He was admitted to Harper hospital February 13th, very much emaciated and debilitated, scarcely able to be up and around the ward more than three or four hours a day.

For some time before his admission he had had constant high temperature, rapid pulse and a large amount of expectoration.

The physical signs showed a large anfractuous cavity possibly bronchiectatic at the upper left apex, with smaller cavities below this and in the lower portions of the lungs. The respiratory murmur at the former situation was purely tubular, and there was at all times well marked pectoriloquy. This large cavity seemed to be very near the external surface. Repeated examinations of sputum showed no tubercle bacilli.

He was placed for a time on a treatment by hypodermic injections of iodin and inhalations of chlorine gas, but showed no marked improvement, except a diminution of expectoration and pyrexia, so that he was rapidly failing and it was apparent would soon die. Now, as the location of the larger excavations seemed to be very favorable for operation I obtained his consent to do it, and on March 21st cut into the cavity at the left apex, through the third intercostal space in the manner previously detailed.

He took the anæsthetic very well, and the operation occupied but a few minutes. There was no hemorrhage at the time, and he maintained a tolerably good physical condition throughout. A tube was inserted immediately after the operation, and he was removed to his bed. The examination with the finger at the time showed the excavation to be large, tortuous and smoothly lined. This latter indication led us to doubt whether the cavity had really been reached or not, but by swinging the finger around it was felt to be limited or walled all around, so that, taken together with the fact that the two layers of pleura seemed to be adherent, according to the test given by Poirier, viz: (the ability to see the movement of the lung through the costal layer, and the immobility of the free end of a needle with which the pleural layer was transfixed just previous to the opening) we finally lost all doubt. Dr. H. O. Walker and Dr. P. M. Hickey who kindly assisted me at this time, shared with me the doubt for a time. Moreover the presence, just at the bottom of the excavation, of a good sized pulmonary artery which could be felt by the finger, rendered any further puncturing hazardous. The cavity was drained and treated as in the former case. The patient's cough ceased and for a week he seemed to be improving. But at this time he was taken with diarrhœa which became obstinate, and seemed to reduce his strength very fast. Coincident was this, there was a strong odor of skatol which could be observed at times emanating from the breath. Whether this came directly from the intestinal canal through the esophagus, or whether it resulted from some chemical reaction of the chlorine gas within the lungs, of course could not be determined. I simply mention it as an interesting observation. The diarrhœa continued with more or less violence despite all measures which we could adopt, and he died from exhaustion April 14th.

The temperature during the last week of his life ranged between 101° and 103½°. He complained of little or no pain, although after the first two or three days succeeding the operation he had very little morphia. The introduction of chlorine gas seemed to cause no irritation, but always a sense of relief and at no time after the operation did the expectoration amount to very much,—excepting, perhaps the three or four days before his death, when we

removed the tube and stopped all except palliative medication. Perhaps if the operation could have been made earlier, this man might have survived a long time.

The foregoing cases, abstracts of which I have given, do not make a very good showing in advocacy of this plan of treatment I admit. But it must be remembered that they were hopeless cases whose courses were nearly run.

I hope to have an opportunity soon of repeating this method of treatment upon cases that are not so far advanced.

While the results of the treatment of the earlier stages of the several forms of phthisis pulmonalis, (exclusive of general tuberculosis) by the plan of hypodermic injections of iodin and chloride of gold and sodium have been all that could be expected, still in the many cases of advanced excavation and caseation in which all methods of medication seem to fail, it would seem imperative that we should seek new methods of treatment and especially ascertain whether or not surgical procedures will assist nature in staying the progress of this disease in this class of cases.

The particular points which I desire to urge upon your consideration, are, first, those made by Poirier and Jonnesco, viz: to open the cavity freely near the apex *without resecting ribs*, and to use the galvano-cautery knife for opening through the lung tissue; and second, the use of chlorine, ozone, bromin or some other antiseptic gas instead of a fluid for the local medication, for the latter it seems obvious can not be well tolerated by even diseased lung tissue outside of the cavity itself. Whereas with the use of a *gas* which is tolerable and capable of diffusion, we may hope to reach remotely diseased portions of lung which are in process of breaking down as well as to render the caseous material in and about the excavation more or less incapable of producing further infection. Another point to which I desire to call your attention before closing is the question of adhesion between the two pleural layers. It is plain that if the costal and visceral layers are not adherent, it is inadvisable to proceed further with the incision. Now whether the directions promulgated by Poirier and Jonnesco are infallable guides in all cases remains to be seen. However, I think that in the majority of instances all doubt will be dispelled by the insertion of a clean needle and the observation as to the mobility of its free end. I am not here to advocate surgical measures which would prove fatal in all cases, but I trust that the untoward events which I have here presented may lead some possessed of more surgical aptitude to initiate and perfect a better plan for the relief of these universally fatal cases.

DISCUSSION UPON DRS. SHURLEY AND GASTON'S PAPERS.

DR. DENNISON of Colorado—Some experience which I have had in the past year may be of interest to the Section. Eight or nine months ago I had a case of a man who had been having for six or eight weeks recurring hemorrhages from the region of the left infra-clavicular space. All methods in vogue had been employed to stop it but without avail, when I adopted a simple method of bandaging. A collar was put around the right shoulder to act as a fulcrum and two bands were run around the body. Rubber adhesive straps were put on the chest, with all the air possible expired, and then drawn tighter and tighter. The hemorrhage stopped immediately, and I found to my gratification that within three months the large cavity had disappeared.

DR. LAPLACE of Pennsylvania—Speaking of drainage of the chest, I would like to give a little of my own experience. I had a case of empyema from which I removed nearly a half gallon of pus, removed with a curette as much as I could of a thick pyogenic membrane and packed the cavity tightly with a quantity of sterilized gauze. That man never felt better in his life than he did after that operation. In regard to tumors of the mediastinum: About a month ago in Philadelphia a man came under my care who had an enormous tumor over the sternum. It was impossible to make out the nature of it and I determined upon making an exploration. This revealed it to be of a tuberculous appearance and I scraped away at it until there was a cavity as large as my fist into which I could put my hand and rest it upon the pericardium. I had in that case a tuberculous condition of the mediastinum—what might have been elsewhere in the body a cold abscess. I packed that cavity likewise as in the previous case, with a good result, and shall ultimately perform a plastic operation for the restoration of the part lost. There is no limit to that grand principle of surgery, the thorough widespread principle of drainage, the excision of that which ought not to remain, and the packing with something that has capillary properties.

DR. MCCOMAS of Maryland—I had an interesting case of empyema five years ago in a man 25 years of age. I found, as I thought, an accumulation in the pleural cavity and aspirated, drawing off two pints of pus. I closed the wound and treated as we generally do these cases. Ten days later I aspirated again, removing six pints of pus this time, and then washed out the cavity with boiled water. Ten days later the pus had reaccumulated to such an extent that the liver was pushed down nearly to the iliac crest, the respiration was rapid and the patient cyanotic. I aspirated again and still again, making four times in all and having removed altogether twenty pints of pus. Later I had to remove the bandage on account of the pain which the patient experienced, and then washed out the cavity with tincture of iodin and water. That man is hearty and well to-day, although at first I thought I recognized him as a hopeless case.

DR. A. H. FERGUSON of Winnipeg—Some time ago I had a case of empyema in a child which was interesting to me. Repeated aspirations at the hands of the family physician had been made without good result before the case came into my hands. The trephining of a rib with drainage failed to close the cavity, and then I resected a rib and packed with antiseptic gauze. I performed a second and a third resection and continued the packing until finally the cavity closed up nicely. In another case in which I operated for the removal of a section of seven ribs and curetting, although the operation only took thirty minutes the patient died from shock with delirium.

DR. WHITING of Wisconsin—I am not here to teach the leaders of surgery anything, but I want to call attention to the fact that when you put a tube into a hole you have done a bad thing. You have drained the hole and you haven't drained it. The drainage tube, in my judgment, is fraught with more destruction to life than anything I know of.

DR. MURPHY of Chicago—The lung expands by force of the contraction of the opposite lung. The belief is that when you open the pleural cavity the lung collapses. This is so in the dead subject but not in the living; it expands in expiration and collapses in inspiration.

DR. DALTON of Missouri—Some time ago a young man 22 years of age entered a hospital at St. Louis with a stab wound in the right thorax in the second or third interspace, about an inch from the sternum. A large quantity of blood and froth escaped at every respiration and we considered him in no condition for surgical interference. Believing he

would die unless the wound was enlarged and packed, a four inch vertical incision was made. The cartilages of three ribs were cut, and with the use of large retracting forceps we got a view of the right lung cut to the extent of one or two inches, bleeding freely and the right pleural cavity full of blood. I caught the edges of the wound in the lung together, drew them to the surface and closed with catgut, cleaned out the pleural cavity and sewed up the wound in the chest wall. The patient rallied from the operation, but died a few hours afterwards. I was glad to find upon post-mortem that the wound in the lung was perfectly closed.

Dr. Quimby of New Jersey—I wish to put an emphasis upon the importance of early incisions in pleural effusions. In three cases where I operated before the effusion became purulent I think my success with them was due to the fact that I operated early. Early incisions have a tendency to save the lung.

Dr. Shurly—I will add in regard to those cases where I opened the pulmonary cavity, those which were tuberculous died and those that were non-tuberculous lived. I object to the statement that every case of empyema is tuberculous.

SURGERY OF THE GALL BLADDER, CYSTIC AND COMMON DUCTS, WITH REPORT OF SEVEN CASES OPERATED UPON.

BY W. J. MAYO, M.D.

SURGEON TO ST. MARY'S HOSPITAL, ROCHESTER, MINN.; PRESIDENT OF THE MINNESOTA STATE MEDICAL SOCIETY.

Mr. President and Members of the Southern Minnesota Medical Society:—The rapid advance in abdominal surgery during the past ten years has brought the gall bladder into the field of operation, and in this time more definite knowledge in regard to its pathology and treatment has been gained than during the previous 160 years.

In 1733, Petit wrote the first of his classical essays, and during the succeeding ten years placed the pathology of gall bladder disease upon a sound basis far in advance of his time, but his work was little appreciated until recent years. With the anatomy of the gall bladder, its ducts and their relative position to the liver and duodenum, you are all familiar, and I will omit a description. The physiological function of the gall bladder is a mooted point—the commonly accepted belief is that it is a storehouse for bile to be discharged during digestion.

So late an authority as Landois and Stirling authorize this view. J. B. Murphy logically attacks this question, and as a result of experimental and practical study asserts that it has nearly the same function as the second bulb of a syringe in regulating the flow of bile, causing a steady stream rather than an intermittent current into the duodenum. Cholelithiasis is the most common pathological condition of the gall bladder for the relief of which surgery offers the only rational method. It is gratifying to us as Americans to see the important part played by our countrymen in this work, and to note that to Dr. Bobbs of Indianapolis, is due the credit of priority of performance of the modern operation in 1867. Gall stones, as a rule, are formed in the gall bladder itself as a result of precipitation and accretion. Under some circumstances stones are also found in the hepatic ducts, especially in cancerous obstruction. The diagnosis depends largely upon the history, character and location of the pain, and often physical examination will reveal a tumor in this region. Jaundice does not appear unless the common duct is obstructed and is far more common in malignant disease, and for the same reason the color of the stool, upon which much stress has been laid, is usually of small importance. The diagnostic value of the finding of gall stones passed with the stool is absolute, but I am inclined to think that such passage of gall stones is less common than generally thought, and certainly the onset, duration and cessation of a colic is no indication that a stone has been passed, but merely that the cystic duct has been obstructed and that either the obstruction has been removed or the bladder has exhausted itself in the effort. When olive oil in large quantities was a popular remedy for hepatic colic, the soap balls passed with the stool, and resulting from the action of the intestinal alkalies upon the oil were erroneously supposed to be the offending bodies, and as such exhibited to the sufferer and his admiring friends. At the present time we hear much less about stones found in the feces. While stones may be passed through the ducts, or by ulceration, into the intestine, externally, or into any neighboring viscus, or after causing years of suffering remain quiescent without producing further trouble, such fortunate outcome is very exceptional, and in the majority of instances operation is the only relief from a life of suffering or death from a complication. Septic infection of the gall bladder, either as a result of stones, or from extension upward through the ducts of a septic process is a not uncommon occurrence, and may result either in chronic inflammation or empyema. Fenger has done much to elucidate this subject.

Large accumulations in the gall bladder are not infrequently confounded with right renal tumors or even with ovarian cysts, and many such mistakes are recorded, especially when dropsy of the gall bladder exists with great retention of catarrhal products as a result of duct obstruction. Injuries of the gall bladder sometimes occur. Some years ago in the practice of my father I saw a case of undoubted rupture of the gall bladder. A boy 12 years of age was thrown from a wagon, the wheel passing partly on to the right side of the abdomen. Ascites developed and large quantities of thin bile were aspirated at different times during a month. Complete recovery took place. Operations upon the gall bladder may be divided into three general classes:

First, cholyecystotomy, or the simple opening and removal of stones. Following that master of abdominal surgery, Lawson Tait, this operation is usually done at one sitting and the open gall bladder stitched into the incision, forming a temporary fistula. As bile is not septic and does not cause peritonitis, other than the adhesive variety; slight biliary contamination of the peritoneum causes no harm, and this open method enables us to manipulate with the finger inside the abdomen, outside of the gall bladder, which at times is a great aid in extracting stones. It also allows the subsequent escape of overlooked stones. If the contents of the gall bladder be septic upon aspiration after the abdominal incision is made, it is far safer to stitch it into the incision and delay opening for several days until adhesive inflammation has shut it off from the general cavity.

Blind aspiration of the gall bladder has long been known to be of great danger; not, as supposed, on account of the escape of a few drops of bile, but

REPORT OF SEVEN OPERATIONS UPON THE GALL BLADDER OR ITS DUCTS.

Number. Initials. Residence.	Nat. Age. Sex.	In Consultation with.	Date and Place of Operations.	History.	Examination.	Operation.	Result.	Remarks.
1. E. B. B., Sleepy Eye, Minn.	Am. 36 M.	Hospital Staff.	Dec. 2, 1890. St. Mary's Hospital, Rochester.	Colics for several years; during last year continuous pain in right side. Has had to use morphia constantly.	Emaciated, sallow. Tumor in right hypogastrium.	Incision over tumor. Single stone. Gall bladder adherent.	R	Fistula closed in three weeks.
2. F. L., St. Charles, Minn.	Ger. 33 F.	Dr. Chamberlin, St. Charles, Minn.	June 24, 1891. St. Mary's Hospital.	Colics began nine days after childbirth, two years ago. Constant pain and frequent colics.	Indefinite tumor, and great tenderness in right hypogastrium.	Incision in right semi-lunaris. One large stone impacted in cystic duct.	R	Great difficulty was experienced in dislodging stone. Fistula healed in two weeks.
3. G. Z., Dover, Minn.	Ger. 28 F.	Dr. Dugan, Dover, Minn.	Feb. 3, 1892. St. Mary's Hospital.	Attacks of pain, with more or less jaundice during past year. Pain in pelvis.	Liver very large. Small tumor in pelvis.	Incision in R. S. No stone. Common duct blocked by adhesions which were torn loose. Incision in median line. Papillary cyst of ovary removed.	R	Patient improved greatly for six months. In nine months died from malignant papilloma of peritoneum.
4. E. J. D., Quincy Mills, Minn.	Am. 36 F.	Dr. Chamberlin, St. Charles, Minn.	Aug. 17, 1892. Home.	Hepatic colic for nineteen years. Two attacks of peritonitis.	Patient jaundiced; vomiting; pulse 130, with symptoms of acute obstruction.	Gall bladder very adherent. Peritonitis. Ninety-six stones.	D	Patient died in a few hours. Operation lasted but twenty-five minutes.
5. S. A. H., Plainview, Minn.	Am. 57 F.	Dr. Waiste, Plainview.	August 29, 1892. St. Mary's Hospital.	Colics for seventeen years. Constant pain in right side.	Pain and tenderness in right hypogastrium. No tumor.	Incision in R. semi-lunaris. Gall bladder adherent. Fifty-six stones. Sutured to skin.	R	Fistula healed in four weeks.
6. C. S., Potsdam, Minn.	Ger. 56 F.	Dr. Adams, Elgin, Minn.	Dec. 6, 1892. St. Mary's Hospital.	Pain for six months. Tumor forming in right side two months.	Movable tumor in right hypogastrium. Empyema gall bladder.	Incision over tumor. ʒiv pus evacuated. Sutured and drain'd	R	Fistula healed in three weeks.
7. W. H., Racine, Minn.	Am. 71 M.	Dr. Plummer, Hamilton, Minn.	April 6, 1893. St. Mary's Hospital.	Colics for two years. Jaundice for two months.	Great debility, cholæmia, white stools, etc.	Incision R. S. Bladder deep. No stone. Obstruction in common duct. Anastomosis by Murphy's button.	R	The bladder could not be brought to surface. Obstruction could not be removed. The Murphy button worked quickly, and relieved jaundice, etc.

because of the contents being often septic and the slight leakage setting up septic peritonitis.

Suture of the gall bladder after opening and removal of stones is seldom practiced and the method is condemned as unsafe. This, however, is not logical—the whole question of safety depends on the patency of the ducts. If there be no obstruction to the outflow, so that there will be no tension within the sac, suture and return is a safe procedure. Abbé tests the condition of the ducts by using a syringe and forcing water through them into the intestine; if the fluid passes freely he does not hesitate to trust to immediate suture and return.

The second general class is where the gall bladder is removed. Langenbeck first practiced cholecystectomy and formulated indications for its performance; he gives much too wide a scope to this procedure, and Greig Smith very properly limits its application to single or double stone, where the fundus of the gall bladder can not be sutured to the abdominal wall, or to cases wherein the tissues are too thin or inflamed to bear a suture. It is mainly practiced by a few continental surgeons and is not a popular operation.

The third class is a very important and often perplexing one—wherein obstruction exists either in the cystic or common duct. To suture such a gall bladder to the abdominal walls is to invite a permanent fistula; in any case an annoyance, and if complete obstruction of the common duct exists the escape of all the bile externally leads to debility and eventually death. Fortunately, the recent work of Mr. J. Knowlsley Thornton, Mr. Mayo Robinson, Robert Abbé and Charles McBurney has given us methods of opening these ducts and removing stones with either suture of the incised duct or drainage. The latter distinguished surgeon has successfully opened the duodenum and shelled an impacted stone out of the intestinal orifice of the common duct. There will remain certain cases in which the obstruction in the ducts can not be removed, and in these cases entero-cholecystotomy is our only hope of success. Winiwater first sutured the gall bladder to the colon; while this was much better than an external fistula, yet most of the physiological effect of the bile in digestion was lost. Gaston of Georgia, by experiments upon dogs developed a complicated method of suture to the duodenum; but it remained for a brilliant young Western surgeon, J. B. Murphy, to invent his mechanical device by means of which an effectual back door for the escape of bile into the duodenum can be safely and quickly made. In conclusion, I append a diagrammatic report of seven cases in which I have operated upon the gall bladder or its ducts.

SPECIMENS DEMONSTRATING THE OPERATION OF GASTRO-CHOLECYSTOTOMY, END-TO-END ANASTOMOSIS OF GUT, AND THE CONNECTING OF THE GALL BLADDER WITH THE ALIMENTARY TRACT.

AS PERFORMED WITH THE MURPHY BUTTON, AND BY THE MAUNSELL OPERATION.

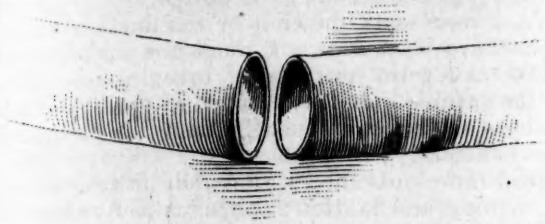
Read before the Section on Surgery and Anatomy at the Forty-fourth Annual Meeting of the American Medical Association.

BY B. MERRILL RICKETTS, M.D.

CINCINNATI, O.

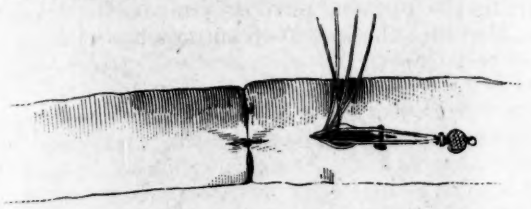
I am sorry, indeed, that circumstances would not permit of my being with you this morning as an-

nounced on the program. However, I must content myself with the time allotted to me this afternoon, a duly appreciated courtesy granted by the chairman. Dr. Murphy having demonstrated his gall bladder operation upon the dog prevents me from making anything more than a passing remark upon this operation. However, I wish to speak more fully upon the various other anastomoses.



No. 1.

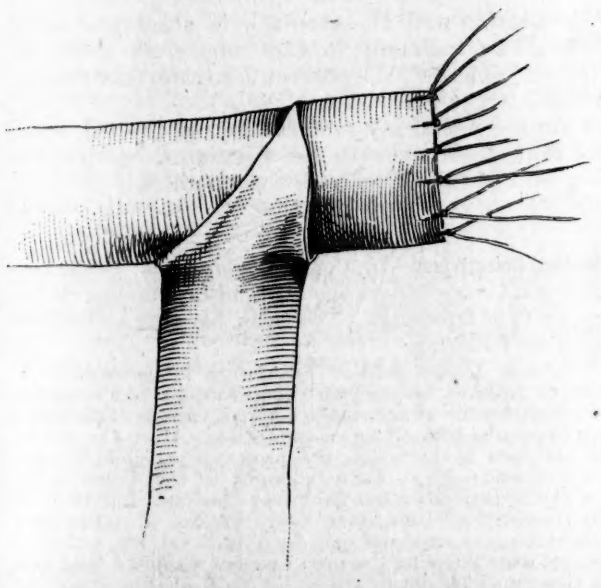
That I might simplify matters both in my remarks and demonstrations I have, with the assistance of an artist been able to give charts that are more instructive than words.



No. 2.

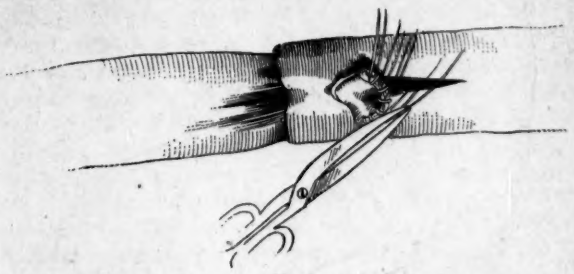
Six of these fully illustrate an end-to-end anastomosis, while four show the operation upon the stomach as suggested by Maunsell of New Zealand, some eleven years ago, but which was not published and made known until one year ago.

No. 3.



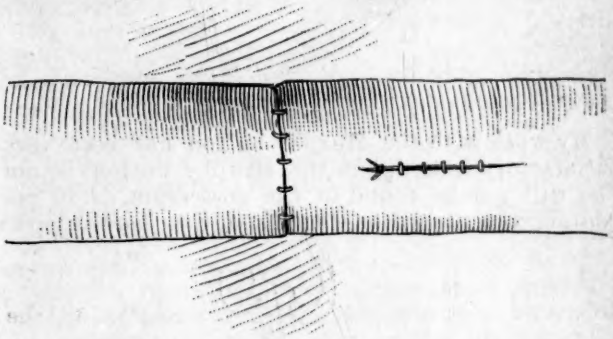
No. 4.

Although I have operated frequently upon the dog in this manner, I know of no person except Dr. Frank Hartley of New York, who has made the operation upon the human being. This Dr. Hartley did in the month of May, 1892, for carcinoma of the gut.



No. 5.

He informed me last November while I was in New York that the patient (a man) was living and doing well at that time. I suppose that we will hear from Dr. Hartley concerning this case.



No. 6.

This operation, when understood, can be made by the average practitioner without much preparation; all that is needed being a knife, scissors, needle and thread.

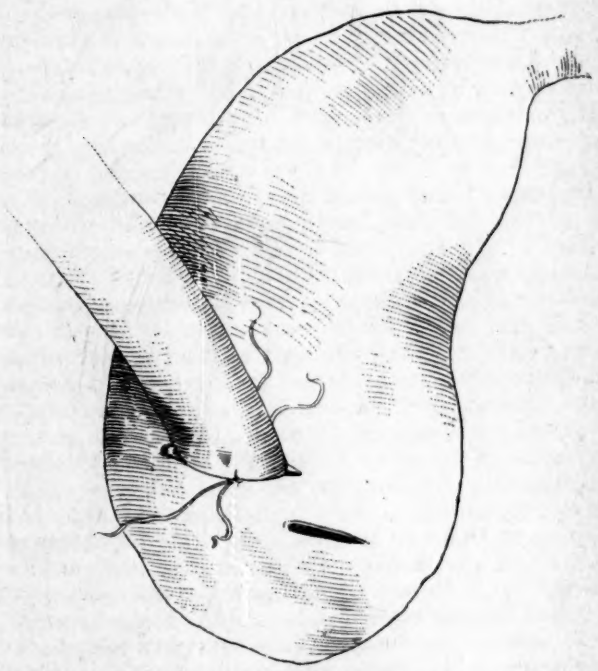


Fig. A.

With this, as with all other devices for anastomosis, greater difficulty is experienced in gut of small caliber, and I find less difficulty in making connec-

tions with the dog's gut as it approaches the caliber of the average human alimentary tract.

Fig. B.

My work with the Murphy button has been very satisfactory indeed, but the Murphy button is not and will not be found in the possession of 10 per cent. of the practitioners. Then, too, there is nothing left within the alimentary tract to jeopardize the life of the patient in its passage through that tract. Having not seen Mr. Maunsell's description of the operation, and having depended upon a short statement and one illustration, I have been left to learn of the operation through personal experimentation. I have thoroughly satisfied myself by this means, together with the statements by Dr. Hartley, that his operation was a success, and I am now ready to recommend it as one of the best means we have for the various anastomoses within the abdominal cavity.

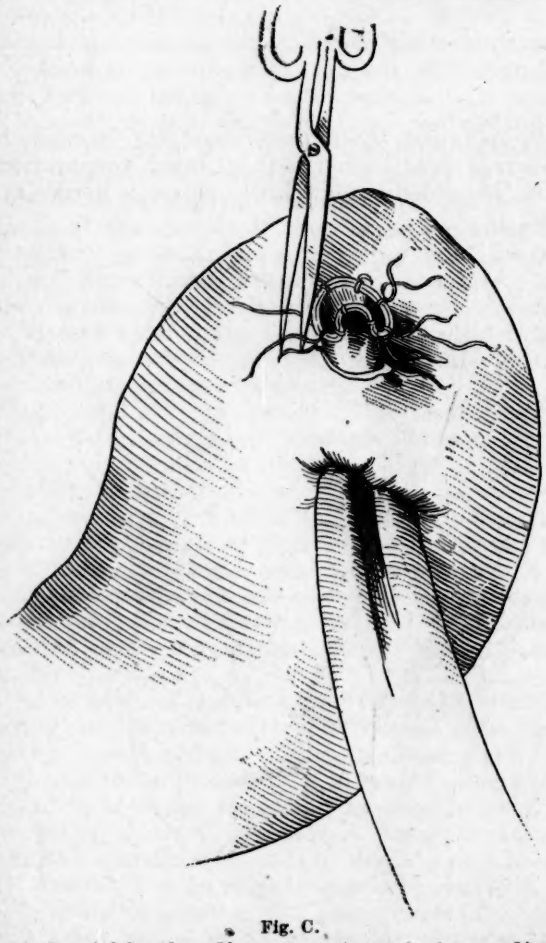


Fig. C.

No. 1 represents ends to be united.

No. 2 represents the ends of the fixation sutures, which have been drawn through the opening made in the gut for the purpose of invagination. These are the sutures that are removed after invagination has been produced, because the knots are on the peritoneal surface.

No. 3 represents the sutured ends drawn through the opening, and fixation sutures just before removal.

No. 4 represents completion of suturing, all the knots of which are on mucous side.

No. 5 shows partial reduction of invagination and stage of operation when ends of sutures are cut.

No. 6 shows appearance of gut after reduction and suturing the opening purposely made for invagination, also that the knots of sutures are within.

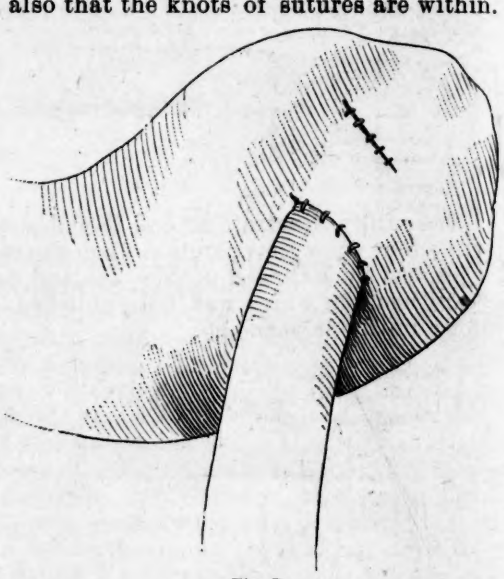


Fig. D.

Connection with the stomach is accomplished by making two incisions in that organ, as shown in Figs. *a*, *b*, *c* and *d*. The object is to insert the smaller into the larger one.

I am sorry that my remarks are so limited, but I feel that, together with the diagrams, enough has been said to fully illustrate the operation.

Medical Detectivism.—Dr. Conan Doyle's tales of detective acumen has made famous one of his medical teachers in the University of Edinburgh. The latest paragraph about Dr. Bell is the following:

"Professor Joseph Bell of Edinburgh is the original of Sherlock Holmes. Some years ago Professor Bell was medical examiner for an insurance company and an Edinburgh man presented himself for examination. After the victim had stripped to the waist, the professor poked him in the ribs and said:—"You have belonged to the Volunteers?" The gentleman admitted that was the fact, but said his volunteering had been done years before. It seems that certain muscles are developed by a military life, and that the professor knowing the man was not a soldier, and seeing those muscles developed on his body, at once jumped to the correct conclusion that he had been a Volunteer."

THE ESTABLISHMENT AND MAINTENANCE OF AN ARTIFICIAL URETHRA ABOVE THE SYMPHYSIS PUBIS IN CHRONIC PROSTATIC OBSTRUCTION.

Read in the Section of Surgery and Anatomy, at the Forty-fourth Annual Meeting of the American Medical Association.

BY D. J. HAYES, M.D.

MILWAUKEE.

Professor of Surgery of the Genito-urinary System in the Post-Graduate School of Medicine, Chicago, Ill.

I propose to call your attention to an operation for the relief of an extremely distressing and painful form of disease in men, the relief of which was very inadequate until of very recent date. I refer to the establishment of a urethra above the pubic bone in chronic prostatic obstruction.

From a series of over two hundred post-mortems prosecuted by Sir Henry Thompson on male patients over 55 years of age, to determine the percentage of those who were affected with prostatic enlargement it was found that about one in three had more or less enlargement, and only about one in seven of those exhibited symptoms of the disease during life. Consequently we may expect about one man in twenty who is approaching 60 years of age to consult us for this difficulty.

As a rule, enlargement of the prostate takes place in all directions, with occasionally the development within it of separate tumors resembling uterine fibromyomata. Sometimes only one lobe is affected, and again the whole trouble may be due to overgrowth of the middle lobe, which when enlarged gives rise to complete retention.

As the gland enlarges, the length of the prostatic urethra increases, often reaching four inches in length. The vesical orifice is thrown up behind the symphosis, and the curve of the prostatic urethra is much increased, which explains the difficulty often experienced in introducing an instrument into the bladder, and has led to the use of specially devised instruments to traverse the deformed urethra.

In advanced prostatic obstruction the greater portion of the bladder is lower than the internal orifice of the urethra, and forms a pouch behind the prostate. More or less residual urine is left in this pouch after each act of micturition. The obstruction as well as the residual urine increases from month to month and from year to year, and undergoes ammoniacal fermentation from the presence and action of putrefactive bacteria, producing irritation and progressive infection. Inflammation extends from the mucous to the submucous and muscular coat. The bladder walls become hypertrophied from over work. Contraction takes place with loss of extensibility.

The urine which is loaded with mucus, pus and putrefactive bacteria, is forced back into the ureters, distending and producing inflammation in them.

On account of the stagnation of putrid urine in the bladder and ureters, more or less of this urine is left in the pelvis of kidneys, ending in pyelo-nephrosis or surgical kidney, from which the patient dies, but not until after months and perhaps years of the most intense suffering.

Many cases of cystitis due to prostatic obstruction are entirely relieved by rest and attention to the general health, while in more advanced prostatic disease the distressing symptoms may be relieved by withdrawal of the residual urine with the catheter and thoroughly irrigating the bladder with antiseptic solutions and proper internal treatment. In another class of cases of which I wish to speak more fully the obstruction is more or less complete. Perhaps not a drop of urine can be passed without the use of the catheter. The bladder is much contracted and the use of the catheter becomes a necessity from fifteen to twenty times a day. The increased growth of the prostate makes the canal difficult to traverse, alike for the surgeon and patient. He only experiences half an hour's rest at night when a desire comes to urinate; again another attempt is made to pass the catheter through the deformed urethra. His powers are taxed to the utmost for continuous sleep is out of the question and his health rapidly declines. Among some of the many operations which have been devised from time for the reduction of prostatic hypertrophy may be mentioned, first, the injection into the prostate with a curved needle of a solution of iodin and iodid of potassium (Heine) which not only gave negative results, but proved to be dangerous. Many competent observers have spent both time and money with electricity without showing any brilliant results. The different methods of compression which have been used have not been attended with success, notwithstanding their frequent and continued recommendation. Internal medical treatment has been as ineffectual as compression.

Mercier's method of punching out a portion of the middle lobe through the urethra by a specially devised instrument has had few advocates and was never used to any extent on this side of the Atlantic.

Another operation which is more recent, and with which the name of Reginald Harrison is intimately connected, consists in opening the bladder by a median perineal incision, dividing the obstructing portion of the prostate and retaining a tube in the opening for six or seven weeks; large bougies are subsequently passed to keep the wound open, when finally it is allowed to heal. The low operation has many disadvantages. First, the patient who is generally in a poor condition of health from long suffering is confined to bed for many weeks; secondly, when the tube is withdrawn and the patient is up and around, there is a constant dribbling of urine, and when the opening is allowed to heal, all the old symptoms are liable to recur.

Prostatectomy, supra pubically through the perineum, or combined, has given brilliant results in many cases in the hands of McGill, Guyon, Moullin, Belfield, Keyes and other enthusiastic workers in the department of surgery. As a rule, patients who submit to this operation are men well advanced in life, and worn out by long continued suffering have renal complications, and the mortality must necessarily be high from uremia and sepsis. The question now arises, can anything be done by any other operative measures for the permanent relief of those cases? It can be answered in the affirmative. By the establishment and maintenance of a urethra above the symphysis pubis. The honor of having first planned and performed this operation belongs to Dr. Hunter McGuire. The technique of the operation is about the same as supra pubic cystotomy for vesical calculus. The patient is prepared the same as for any other abdominal operation. The rectal bag is introduced and distended with fluid. The bladder is thoroughly cleansed with a one-sixth per cent. solution of salicylic acid, which has the advantage over other solutions

of removing completely all the mucus and pus from the bladder wall, which is an important point in the subsequent steps of the operation.

The bladder is distended with the same fluid. The supra pubic region is thoroughly disinfected. The incision is made down to the bladder in the usual way and the bladder is opened on a line with the upper border of the pubic bone. The rectal and bladder distension raises the bladder in the pelvis, consequently the peritoneum is not encountered.

After the bladder is opened the interior is thoroughly explored for vesical calculus, tumors, etc. If there is obstruction at the outlet of the bladder due to projection of the middle lobe, its removal should be attempted if the patient's strength will admit. Any of the tissues should not be lacerated during the operation; particularly is this true of the loose cellular tissue surrounding the bladder as it opens avenues for subsequent urinary infiltration. The bladder walls are not sewed in the wound but allowed to drop back into the pelvis. A large gum catheter is introduced through the wound into the bladder and the urine removed by siphon action. When the wound contracts down to the size of a ten or twelve English catheter the opening is maintained by wearing a plug which resembles a tracheotomy tube, at least a portion of the time. When the desire comes to urinate the plug is removed and the bladder empties itself through the artificial urethra with considerable force. The urethra which is now established is from three-fourths to one and one-half inches in length. In the intervals of urination the recti muscles and other tissues close the opening and there is no dribbling of urine whatever.

Within the past year I have established an artificial urethra above the symphysis pubis in two cases; both were very great sufferers and in both the time had arrived when the introduction of the catheter was difficult both for the patient and surgeon. One of them has kindly consented to appear at the meeting this afternoon. He is a man nearly seventy-two years of age, and has always enjoyed excellent health until about five or six years ago, when his trouble first commenced with frequency of urination, particularly at night. He grew progressively worse, and for the past six months previous to the operation he was not able to leave the house and was introducing the catheter from fifteen to twenty times a day. He was suffering fearfully, notwithstanding the use of large doses of morphine. His urine contained large quantities of mucus pus and bladder epithelium. Although he had been a very great sufferer for some time no evidence of renal disease could be found by either chemical or microscopical examination of the urine, which is exceptional in a case that has had disease in the lower portion of the urinary tract so long. He was very anemic and his health was rapidly declining. He consented to an operation which was performed on April 11, 1893. The preparatory treatment consisted in irrigating the bladder twice daily for three or four days previous to the operation with a saturated solution of boracic acid containing one-sixth per cent. of salicylic acid, trit. repens. and salol internally. The bladder was opened in the usual way and in a pocket behind the enormously projecting prostate were found a few small stones which were removed. The bladder was allowed to drop back in the pelvis and a large drain introduced through the wound into the bladder. No attempt was made to remove any of the projecting portion of the prostate as the patient's enfeebled condition would not admit of it.

There was some temperature following the operation. The bladder was irrigated three times daily through the tube and dilated as much as possible by hydraulic pressure. He was relieved from pain immediately after the operation and has taken no morphine since. His urine is now clear from mucus and pus and he is able to hold his water from three to five hours during the day and only arises once or twice at night. When the wound contracted down to the size of a number 10 English catheter the plug which resembles, as you will observe, a tracheotomy tube, is introduced for at least a portion of the day to maintain the opening. The patient is now able to empty the bladder completely through the artificial urethra which is just one inch in length. The urine is often expelled several feet from the body. There has been no dribbling of urine whatever since he is up and about. He has gained very rapidly since the operation and you will observe that he is in good condition. He eats well and sleeps well and goes to his place of business daily. He is an enthusiastic advocate of the operation and those who wish to examine him may do so.

The next case was a man 64 years of age. He had been suffering more or less for six years; for some months previous to the operation he was passing a catheter from twelve to fifteen times a day. He had a severe cystitis and his bladder was contracted; rectal examination with a sound in the bladder showed the prostate greatly enlarged in both longitudinal and transverse diameters. His urine was loaded with mucus, pus, and occasionally contained small quantities of blood. He had been treated for some time with antiseptic irrigations of bladder and morphine suppositories. The operation was made in the usual way; the bladder walls were found greatly thickened and sacculated.

In the course of two weeks he was up and about, and when the wound contracted down to a number 10 English catheter, which was about six weeks, the plug was introduced to maintain the opening, and worn a portion of the time. There was some necrosis of the prevesical tissues due to contact with the septic urine. To obviate this danger Dr. W. T. Belfield, of Chicago, recommends making the operation in two stages; at the first operation merely exposing the bladder and packing the wound with gauze until granulations are established, five to seven days, then opening the bladder and completing the operation. The urine is now free from mucus and pus, and he is able to hold it from three to five hours at a time. Both patients are enthusiastic advocates of the operation.

The question might be asked: Is this simply a palliative or ultimately a curative operation? The limited time that has elapsed since my operations will not admit of my answering this question from my own personal knowledge. Dr. McGuire who has had a large experience with the operation reports gradual reduction of the size of the prostate with final restoration of the powers of micturition by the natural route. This is not unreasonable to expect when we consider the greater portion of the hyperplasia is due to the disturbance of urination which constantly exists. And when the bladder and prostatic are put at rest gradual absorption of the ob-

structing tissues might take place. No case in the whole field of surgery can appeal more to our sympathies than a man with advanced cystitis due to prostatic obstruction, and in no case should a surgeon stand by and use simple palliative measures when a radical operation performed early will save the patient long and indescribable suffering.

A NEW MATERIAL FOR SURGICAL SPLINTS AND JACKETS, WITH A METHOD FOR APPLYING IT.

Read in the Section on Surgery and Anatomy, at the Forty-fourth Annual Meeting of the American Medical Association.

BY EDWARD A. TRACY, M.D.
BOSTON, MASS.

This material, in its crude form, is old as the hills —for the members of the energetic wasp family have used it, time out o' mind, in the construction of their homesteads. I refer to wood pulp.

There are many varieties of pulp board on the market, and to give their characteristics in detail would needlessly take up your time; suffice it to say they were tried and found wanting. The needful combination of properties sought for was plasticity, toughness, elasticity and rigidity. It took some experimentation to get the desired product, but my task was lightened by consulting my friend, Mr. Charles H. Fish, of Manchester, N. H., a gentleman familiar with every branch of pulp manufacture.

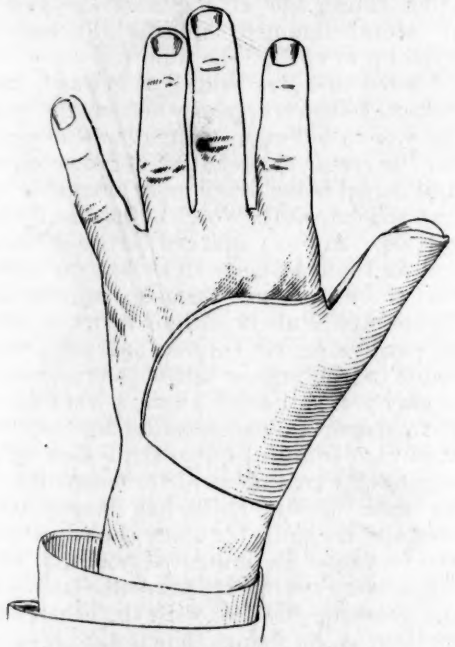


Fig. 1.

The experiments made, and the manufacturing processes employed, might form matter for interesting discourse in the laboratory and the mill; I do not propose to claim your attention for them here, but shall place directly before you a sample of the finished material, and explain how the practical surgeon bends it to his will and produces therefrom a good surgical splint.

A sheet of the material is taken and the splint-blank of the shape intended cut from it. Ordinary arm and leg splints can be outlined immediately on the pulp-sheet and cut without other pattern. For more complex splints, as of the elbow, shoulder, spine, or pelvis, it is serviceable to first cut a pattern of cloth or paper laid over the part in the position it is intended to retain it, and afterwards, with this pattern for a guide, the proper shaped blank can be cut from the sheet of pulp board. The splint-blank should be moistened (best done by means of a brush) with water, or a stiffening solution, just enough to render the material plastic; then it should be carefully molded over the part with the aid of a roller bandage; after being so retained for a moment, let it be removed and dried. An accurately fitting splint results.

Of the various stiffening solutions tried, that of potassium silicate gives particularly good results. The solution ordinarily sold for surgeons' use and further diluted with water (10 to 50 per cent. according to the rigidity desired) can be conveniently used. This solution hastens the drying process, adds rigidity to the splint, prevents perspiration from softening it, and renders the splint antiseptic. These facts are illustrated in the specimen shown, a splint made in fifteen minutes for a case of compound fracture of the right forefinger; during a part of the time it was worn, its distal end was plunged thrice daily into an antiseptic solution and you can witness how it withstood the treatment. (See Fig. 4.)

A solution of dextrine serves well, adding toughness and stiffness to the material. It is convenient for the general practitioner because dextrine (to be had of paint wholesalers) can be kept in powder form and

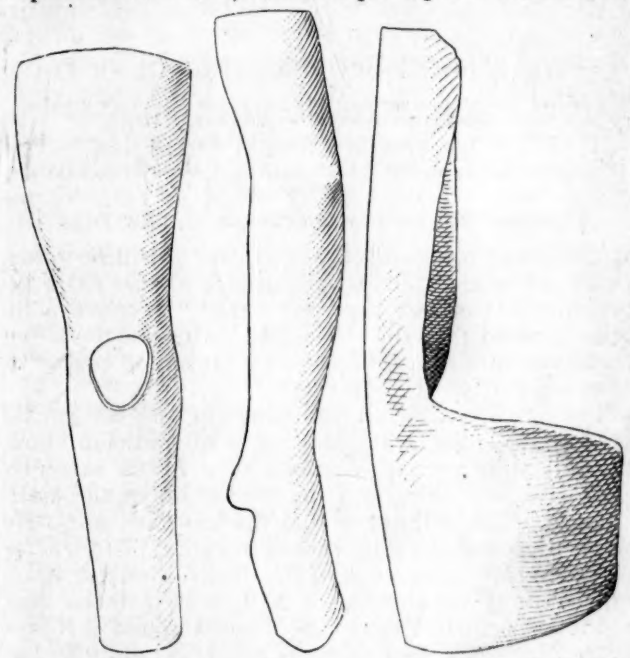


Fig. 2. Fig. 3. Fig. 4.

a solution extemporized at any time. Good results are gotten with water as a moistener, and I recall an emergency case treated last winter where with it, a kitchen fire, and a piece of this pulp board, an excellent splint was made in half an hour for a severe injury of the ankle. The splint was worn for three weeks.

Now that the practical working of the material has been touched upon, a glance at the possibilities of its future use may be permitted me.

An illustrious member of this Association, Dr. Marcy of Boston, struck the keynote on seeing one

of my earlier splints: "The surgeon must make a splint to fit the limb—not the limb to the splint."

For leg, arm and finger splints, it requires no special skill to obtain superior results with my material. A study of the accompanying illustrations will indicate this. No. 1 is that of a splint for fixation of the left thumb, including its metacarpal bone. No. 2 shows an anterior knee splint for making immobile the knee joint; with a reënforcement controlling the quadriceps femoris it may prove useful in fracture of the patella. No. 3 represents a splint molded over the inner side of the right arm as it hung limp by the body, the palm against the thigh.

In complex cases the genius of the surgeon and his handicraft can shine forth in the creation of apparatus suitable for the case.

Apparatus heretofore impossible or rare because of its cost or the necessity for employing skilled tradesmen, will become plentiful.

Finally, knowing the properties possessed by this material, it requires but little foresight to comprehend the evolution in the near future of radically new apparatus for the treatment of various surgical affections.

In concluding, I feel happy to here express my hearty acknowledgment and thanks for suggestions and kindnesses tendered me by Drs. H. P. Bowditch, M. F. Gavin, G. W. Gay, H. M. Marcy and D. W. Cheever of Boston; also, to Dr. W. M. Conant, who very courteously placed suitable hospital cases at my disposal, when experimenting on the material.

ON SOME POINTS CONCERNING CLUB FOOT.

Abstract of a clinical lecture delivered at the Children's Hospital, Great Ormond street, London, May 11, 1893.

BY EDMOND OWEN, F.R.C.S.

SURGEON TO THE HOSPITAL, LONDON, ENG.; SURGEON TO ST. MARY'S HOSPITAL.

[ABSTRACTED BY A. M. PHELPS, M.D., NEW YORK.]

Mr. Owen recognizes the two forms of equino varus, viz: the congenital and acquired, and also calls attention to the fact that one variety is much more easily cured than the other. He inclines to the belief that pressure in utero is one of the chief causes of the deformity. I quote:

"Probably, after all, the cause of the congenital deformity is the faulty packing of the fœtus in utero. Here I show you a specimen of a fœtus taken by surprise, as it were, and removed at about the sixth month. You will notice that the heels are markedly drawn up and the soles turned inwards. Often after a premature labor we find the feet folded flat upon the front of the chest, and much more inverted than in the specimen I have just handed round. It is a very suggestive fact that no other variety of club foot is found as a congenital defect. Only once have I met with a congenital instance of *talipes valgus*. I suppose the explanation is, that when the fœtus is in utero, the muscular walls of the uterus can easily press and invert the feet against the front of the chest, while it is well nigh impossible for the uterine walls to turn the feet with the soles everted. The extreme inversion is evidently to insure the most convenient packing in utero; the fœtus could not be snugly packed in utero with the soles turned out in the position of talipes valgus."

He teaches that the treatment should be commenced immediately after birth by manipulation and fixation, "that the various fibers which are binding the foot in a faulty position may be the more easily stretched."

"Here is a boy whose foot illustrates the contraction of the plantar fascia—a case of paralytic equino varus. The case shows only in a moderate degree the double deformity, but it well illustrates the creasing across the sole; by pressing with the finger when the foot is in a somewhat corrected position, you will feel the very tight band which is caused by the plantar fascia. The structures needing attention, then, are the skin, the tendon of Achilles, the tibialis posticus, the flexors of the toes, the tibialis anticus and the plantar fascia. Last, we come to the anterior part of the internal lateral ligament. This is a very obstinate element in maintaining the deformity after the tendons have been divided. Students, as a rule, do not understand the importance of the internal lateral—the deltoid ligament. It is attached above to the internal malleolus, and below it spreads into the sustentaculum tali, and (which is the important point) forward on to the scaphoid bone. As a matter of fact only a comparatively small part of the internal lateral ligament runs to the astragalus; a good deal of it goes to the os calcis, and still more to the scaphoid bone; so that, if the foot has been cramped in the position of equino varus, it is impossible to straighten it out correctly, unless the anterior part of the internal lateral ligament which runs from the internal malleolus to the scaphoid bone is effectually dealt with. (This dissected specimen of a club foot shows the strong, anterior part of the internal lateral ligament holding the foot rigidly against the lower end of the tibia.)"

"I said a few minutes back that it was a matter of great concern to the surgeon whether the club foot which he was called upon to treat was a congenital defect, or the result of a central nervous lesion; the congenital defect being much more amenable to treatment than the deformity which is the result of infantile paralysis. And so marked is the difference in the result of the treatment in these two classes of cases, that there are some surgeons who absolutely refuse to operate at all in equino varus, which is the result of paralysis. No surgeon can get a very brilliant result in such cases, but with vigorous treatment he may get, as I shall show, a very fair one."

In the treatment of babies suffering from congenital talipes varo equino I quote the following:

"As regards the treatment of the congenital equino varus, as soon as the child has been washed the manipulations are to be begun by the surgeon trying to put the foot into an improved position. He will gain a little every time. He takes the ankle in one hand, and grasping the foot with the other, he flexes the foot; that is, he brings down the heel, and he gently but firmly everts the foot. Every time he goes to see the mother he must resort to this little maneuver, and he must also get the monthly nurse to help in the intervals of his visits. Three times a day, or oftener, the nurse is firmly to flex the foot; and little by little the skin and the ligaments and the tendons will yield, and the foot will come into the improved position."

"Should the case be neglected, it will return to the hospital with a relapse."

"The mention of this word 'relapse' causes me to make a remark in connection with the treatment of club foot; you hear, or at any rate I hear sur-

geons of experience in connection with club foot, say that they never have, or have had, a relapse after treatment, and that they would be ashamed if any of their cases did relapse. When I hear them publicly talk like this, my thoughts revert to Ananias. Relapses there must be in the treatment of club foot, unless the surgeon is constantly watching over the case day after day and week after week, and it may be year after year; and how rarely can this effective supervision be insured. Relapses there are and must be in the practice of every surgeon.

"I never see relapses in cases which I am permitted to handle after operation."

"But to return: The treatment of the simple congenital defect consists, then, in manipulation—vigorous, it may be—so that the anterior part of the internal lateral ligament and other structures may be well stretched. But suppose after several months of this procedure, although the gain is considerable, it is insufficient—something else must be done; and that should be subcutaneous section of the tendon of Achilles. It is inadvisable and useless for the surgeon to struggle against this strong and resisting structure. If he finds that he is not making sufficient progress, let him divide it first and foremost, and he will then obtain a fresh start. If you turn to your works on orthopedic surgery you will find it advised that section of the tendon of Achilles should always be left to the last division; but I say, let this tendon be divided *first* of everything, as it is the most important element in holding the foot in the wrong position."

He explains correctly that division of the tendon of Achilles not only allows the heel to come down, but also the inversion is overcome. I quote:

"Possibly I have not made myself sufficiently clear. Let me show what I mean upon this cast. Here is the tendon of Achilles running to its insertion, the heel being in the mid-line. The contraction still takes place in the tendon of Achilles, and the heel, which is fairly movable under the astragalus, becomes rolled inwards. This is not theory, it is an actual fact; and when in these cases the tendon of Achilles is divided, not only does the heel come down, but the inversion is corrected."

"How do you know that any individual case of equino varus that you have to treat, is not one of those cases in which simple division of the tendon of Achilles may not effect so much improvement? Divide the tendon of Achilles first and see. That is the only way to find out. I stand by the assertion that the tendon of Achilles should always be divided first, when we are operating for equino varus. Sometimes this simple tenotomy suffices in the way of operation; often other tendons have to be divided as well."

Mr. Owen graphically pictures a case treated by subcutaneous work in the following words:

"Let us in our charity suggest it is a case of relapse, a case which has been under somebody else, and the child is four or five years old. Evidently manipulations, frictions and massage will not suffice for the effacement of the remaining deformity. The tendon of Achilles is to be divided first. Then, perhaps, the tendon of the tibialis anticus and that of the tibialis posticus, subcutaneously, if you will; and subcutaneously the plantar fascia shall be divided; and subcutaneously everything else shall be divided which prevents your getting the foot into the improved position. But in my experience this subcutaneous surgery has not been altogether satisfactory. In any case, for instance, the skin prevents due unfolding of the foot. Of course if a surgeon asserts that he never has a relapse, and that he resorts to no more severe method of treatment than that of subcutaneous division of these structures, then I shall say, granting that all he says is true, by all means let him continue; but my experience in hospital practice, and especially with the out-patient class, is that subcutaneous operations do not effect enough. How, then, is a case of relapsed or neglected club foot to be dealt with? You shall perform the subcutaneous divisions of tendon and fascia, if you will, and in a slight case this operation will suffice.

"I remarked a little while ago that the skin formed a considerable element obstructing the reduction of the double deformity; and it was partly in recognition of this fact that Phelps of New York suggested an extremely radical measure in the treatment of talipes. Recognizing the fact also that the days are fortunately past in which open wounds are followed by inflammation, suppuration, or some form of blood poisoning, Phelps boldly suggested that a free incision should be made into the inner border of the sole of the foot, and that every structure which opposed itself to the perfect correction of the deformity should be thoroughly and effectually divided. This open operation of Phelps' is the operation which I am performing a good deal in connection with these cases—not, of course, in the treatment of every young child, or of any child with a slight deformity, but in the case of a child with a neglected, or an extreme deformity. And I am anxious to advocate it as warmly as I can to-day. I have never found any occasion to regret having resorted to Phelps' operation; but on the contrary have every reason for speaking of it in the highest terms. It is performed as follows: The tendon of Achilles is of course first divided, and, with a good deal of brute force, the surgeon does his best to get the foot into the improved position. A vertical incision is then made on the inner side of the foot a little in front of the internal malleolus, over the head of the astragalus. The incision will probably expose the internal saphenous vein, and this is sometimes divided in the operation, though sometimes the surgeon is able to complete the operation without dividing it; but if it is cut it is no great matter. After that he divides the tibialis anticus and, in the lower part of the incision the tibialis posticus, as it runs round to its insertion."

"The plantar fascia is then cut and some of the abductor of the great toe, and then, deep in the sole, the surgeon meets with the long flexor of the toes. Then, using some force still, he improves the position of the foot. Proceeding further he cuts the anterior part of the internal lateral ligament, at the same time exerting more energy upon the foot, and making a wide separation between the head of the astragalus and the scaphoid. Thus he is enabled to get the foot into the straight line, and, breaking through any remaining fibers that resist, he bends the anterior segment of the foot right back, opening the calcareo-cuboid joint, in all probability. When he is satisfied that nothing remains to impede the easy effacement of the deformity, he gently fills the gaping wound with mercuric gauze, and encloses the foot in lateral splints of house flannel which have been soaked in creamy plaster of Paris. In fixing up the

foot it is by no means necessary to use force or restraint, for no resisting elements remain. It is advisable in fixing the foot to have the deformity over-corrected, trusting to the growth of granulation tissue to fill up the wedge shaped cavity. Sometimes the dressing has to be reapplied next day, but as a rule, the foot remains undisturbed for ten or fourteen days. In some cases, indeed, I have allowed a longer interval to elapse before disturbing the first dressing."

In my earliest operations, I was half afraid lest the anterior segment of the foot should slough, but I have never had such apprehensions realized. In fact, it looks as if it might almost have been by design that the large artery of the foot, the external plantar, was specially placed along the outer part of the sole so that it might offer no hindrance to the surgeon who contemplated a resort to Phelps' open method of operating for talipes equino varus. In the course of eight weeks—more or less—the wound is quite healed, epidermis has grown over its surface, and the mass of granulation tissue which filled the space is being converted into strong fibrous tissue for the consolidation of the foot.

"I must just briefly allude to other operations. Possibly next time I shall have to say more on this subject, but merely for the sake of making comparison between Phelps' operation and the other operations which pass under the name of tarsectomy—cutting out a piece of the tarsus. In Phelps' operation nothing is cut away. But in the operation of tarsectomy it may be that the cuboid is removed, or that a wedge is taken from the outside of the foot, the base of the wedge being outwards and implicating various bones of the foot. Or it may be that the astragalus is taken away, so that the structures running from the leg to the foot are slackened, and that the os calcis may fall into its position between the two malleoli. But whichever of these forms of tarsectomy is adopted, there is—there must be—a considerable loss of tissue, for the improvement in the position of the foot is effected by a shortening of the external border of the foot. But in Phelps' operation the improvement is effected by the sacrifice of no tissue whatever, but by the insertion of a wedge of space, as it were, on the inner side of the foot. Thus, when the various resisting structures have been divided, a large gap exists between the head of the astragalus and the posterior aspect of the scaphoid bone."

"I show you here a boy whose case was most unpromising for any operation for talipes; the boy with infantile paralysis on whom I was demonstrating a little while ago. Unfortunately, I have no cast or figure to show the position in which the foot was before his operation. Kindly take my word for it that the deformity was extreme and the prospect unpromising. I performed Phelps' operation upon the foot, dividing everything, and now we have the foot in a very fair position; I think we may say a very excellent position, with no inclination whatever to relapse. Now I am sure of this, that no subcutaneous operation could have effected such an improvement as this open operation has effected, and no tarsectomy could have brought about so great and real an improvement, because in that operation the foot is necessarily robbed of most important elements. The result in this case, so far as it goes, is extremely satisfactory. On being made to walk the patient gets his foot very flat, as you see. A most important point in this operation, and one on which Phelps insists very strongly and rightly, is that the malposition must be *over-corrected*. Relapse is not very likely to take place, but if you get (if I may use the expression) well to windward of the defect, it matters less if contraction does take place. It is a little heterodox to say that after an operation on club foot the foot should be put in the over-corrected position. In the textbooks you will probably find the advice still given to put up the foot in the old position for a certain length of time, so that the plastic effusion which takes place between the cut ends of the tendon may be gradually stretched. But the answer to that is that the ends of the tendons should be as wide apart as possible, that the little inflammation which is set up by the operation will be followed by the formation of a certain amount of granulation tissue, that this granulation tissue will be converted into fibrous tissue, and by this means a sufficiently long splice may be put into the tendon; and not only a longer splice than you would get if you put up the foot in the old position again, but a stronger splice. If you were putting the foot up in the old position and then gradually stretching the union between the cut ends of the tendon, with each stretching you would be sure to get an attenuation of the uniting mediums and a weakening of the tendon. You would get a less strong band of union between the cut ends than if you boldly and at once put the foot up in the over-corrected position."

"Here is a baby on whom Phelps' operation was performed for double congenital equino varus. Now it is said, and I think very fairly, that in a young child so severe an operation as that of Phelps should not be resorted to. I think it is fair criticism, but I will say that if Phelps' operation is going to give a favorable result in a biggish child, why should it not be resorted to in the case of a little child? In *every* case of a little child I would not resort to Phelps' operation; but here is a very little child, not a year old, with double equino varus, on whom I did perform Phelps' operation on each foot, and see how strong the feet are, and in what a very satisfactory position they remain. This child I have seen nothing of since it left the hospital after the operation months ago; that is to say, there has been no after treatment needed. There is nothing like a flail-like condition in the feet. They are quite solid. If we had done a simple subcutaneous tenotomy in this case, and sent the child away, the mother or friends would not have been able to look satisfactorily after the child, and in all probability, relapse would have taken place. My experience has been mostly with hospital patients. There are other surgeons who deal chiefly with private patients, and of course they can have them longer under supervision, and show excellent results with subcutaneous tenotomy. But, by the hospital surgeon, the open operation has but to be practiced to be appreciated."

"What about a Scarpa's shoe? It is quite out of date. If it is used, unless the child is seen almost every day, it will almost certainly give rise to an excoriation or a sore place. Plaster of Paris is far better. But in the early cases the less, if any, retentive apparatus, the freer the leg and foot, the better for the subsequent development."

"Here is a boy sixteen months old, and these are casts of his feet before operation. The case is not

now quite so satisfactory. On the right side there is still a little inversion, notwithstanding all the structures named having been divided. The inversion which persists is, I think, sure proof that after Phelps' operation a limp splay foot is not the result. On the right side, the foot is in a very excellent position, but on the left side, there is just this little inversion, which I believe will be easily corrected by simple manipulation. I do not think that any further operation is needed. I have not seen this child for months."

"It is a point in favor of Phelps' operation, that when you have divided all resisting structures, there can be no more contraction of them. You have done the work and the child will hardly require looking after. As we are going to operate this day week, on this boy (case previously referred to), I shall be able to show exactly the method of treatment; but I may say in passing, that after the large wound has been made, the cavity is generally stuffed with a little mercuric gauze, and that the foot is then fixed in the position of over-correction. I here show you this other boy, operated on two years ago, when he was a year old. This was a case of extreme equino varus. There is no attempt at inversion here, and the boy, who has had plaster of Paris on, if he could stand could get his foot well to the ground. The foot has nothing like a flail between the anterior and the posterior segment of the foot."

RELIEF FROM PAIN IN LABOR.

Read before the Section on Obstetrics and Diseases of Women, at the Forty-fourth Annual Meeting of the American Medical Association.

BY I. N. LOVE, M.D.

PROFESSOR CLINICAL MEDICINE AND DISEASES OF CHILDREN, MARION-SIMS COLLEGE OF MEDICINE; EDITOR MEDICAL MIRROR, ST. LOUIS.

As physicians, we may well ask ourselves if we sufficiently appreciate the importance of saving our patient pain. I will say that pain in the abstract is conservative, that it is the announcement on the part of nature that something is wrong and needs correction, and that we should be very guarded in relieving pain for fear of removing nature's flag of distress rather than removing the cause, but the arguments which will apply to pain which is an evidence of disease are not in my judgment apropos to pain as an accompaniment of parturition.

In the primitive state, undoubtedly woman was possessed with great muscular force and absence of nervous sensibility. Civilization, social customs, modern habits of life have developed the nervous centers at the expense of the muscular tissues, and we have in these latter days women who may truly be termed sensitive plants, whose muscular force is below par and whose nervous systems are "on edge" as it were.

I have made it a rule for many years to insist upon a thoroughly cleared out condition of the alimentary canal upon the part of every woman under my care during the entire term of pregnancy; at the same time I have encouraged elimination on the part of the other excretory organs by the liberal administration of Garrod-Spa water, freely flushing out in this way the kidneys at frequent intervals. The activity of the skin I have encouraged by frequent warm baths at bedtime. This latter has aided in the direction of a greater degree of restfulness which is important.

As every one knows, the average woman is constipated; doubly so during pregnancy, and there are double reasons for making efforts to remove this condition, because the interests of two people are involved instead of one. When I have evidence that labor is near at hand, I give my patient an increased amount of purgation. Immediately following the termination of labor I again purge freely with a view to the better clearing out of the alimentary canal and the removing of accumulated poisons. When I graduated in medicine, the instruction was given me to wait until the third day after confinement before evacuating the bowels. The same argument presented in favor of purgation as a preventer of peritoneal inflammation following abdominal sections, rather than opiates, will apply to the parturient woman. Constant, careful regard for all of the excretory organs, the keeping of the animated system of sewerage thoroughly cleared out, will in my judgment in the majority of cases eliminate puerperal convulsions from the nosology of the accoucheur. So much for elimination.

Now with regard to the best good of our patient from the standpoint of prevention of pain. We all know that the pregnant woman is prone to having her nervous system out of joint; in fact, the condition in itself is a severe test to the female nervous system. It is needless to recall to your mind how the very beginning of pregnancy is announced in many cases by peculiar nervous phenomena. During the entire term the imagination of the woman often becomes exalted or depressed. Her disposition is irritable. In many cases she is continually between two fires; upon the one side the greatest gloom, upon the other an excessive joy. Suspicion, jealousy, general sensitiveness are present, which under other conditions are never dreamed of. Nervous pains abound, migrainé, facial neuralgia, toothache, itching in various parts of the body, together with smarting and other evidence of irritation of the peripheral extremities of the nerves. The most grave nerve troubles sometimes are present; eclampsia, chorea and often mania. Truly we have evidence in favor of the thought that pregnancy is a severe test to the stability of the nervous system.

It is absurd to talk of pregnancy as being a physiological condition; as much so as the eating of one's dinner and the digestion of the same. Under primitive conditions it probably was so, but surely not under the conditions which prevail in this latter decade of the nineteenth century. How many of us have seen the last months of the pregnant woman made miserable by continual aches and persistent pains throughout the abdominal region and other parts of the body where there has been a disturbance of the circulation owing to pressure upon the vessels. Unless this condition of affairs receives attention the average pregnant woman is in poor shape for meeting the ordeal which faces her at the close of her nine months' siege. I consider it our duty to guard the nervous system during this siege as carefully as we have guarded the eliminative organs. We will find that attention to elimination will help us in our service as a pain reliever during these months of trial. The engorgement in certain parts of the body is less; the removal of ptomaines and other poisons, the activity on the part of the secretory system of glands renders the nerve centers less sensitive and less easily demoralized. At the same time

we should save our patient every possible pain during this entire period. The warm baths at bedtime, suggested as aiders in the direction of elimination, also favor the soothing of the nervous system and a completer rest at night. Massage given by a skilled masseuse preferably, is beneficial.

The excruciating pains complained of in the lumbar and abdominal regions can be relieved to a marked degree by rubbing the surfaces with a liniment composed of equal parts of chloroform, tincture of iodin, tincture of belladonna, tincture of opium, tincture of arnica and olive oil. If the restlessness and pain be great toward the latter weeks of pregnancy, in spite of the measures suggested, it is our duty to furnish a more positive relief in the form either of a combination of bromid of soda and chloral, ten or fifteen grains each, to be repeated to the extent of securing rest, or even now and then the administration of an opiate. I believe, however, that it is our duty to deliver personally to our patient the remedy desired and not to write a prescription, in order that no knowledge may be had upon the part of the patient as to the nature of the remedy taken and that we may the better limit it. I have occasionally found a dose of ten or fifteen grains of sulphonal or antikamnia of service at bedtime. One thing I insist upon, that my patient shall not know the remedial agent administered.

We will suppose, now, that the period of labor has commenced and that the suggestions previously given have been observed. The first stage of labor is often tedious, particularly in the primipara, with frequent and persistent nagging pains.

I cannot better state my position than by reporting a single case which is illustrative of a large number:

Mrs. R., the mother of four children. Called hastily in the absence of her usual medical attendant, she seemingly anticipating the time by about two weeks. Age 32. Four previous confinements all long continued and exhausting and terminated with forceps, the reason being given that smallness and compactness of build on the part of the patient precluded natural delivery. Had never been given chloroform for the reason that the physician did not believe the patient was a good subject and besides did not believe in giving chloroform in labor. Bowels had not been moved for three or four days. Instructed the nurse to give an ounce of castor oil together with twenty drops of turpentine, to be followed in four hours by enema of two quarts of hot water administered by the medium of a fountain syringe with a large size soft rubber catheter in place of the usual rectal nozzle, the same to be introduced two-thirds of its length, the enema to be repeated unless a large and free action should be secured. Digital examination revealed a natural presentation with a rigid os in the first stage of dilatation. Giving the patient assurance that everything was in good shape and that I desired to give her a good night's rest, I administered one-fourth of a grain of morphia, hypodermatically, together with fifteen grains each of bromide of soda and chloral by the mouth, the latter to be repeated in two hours. The hour being late and inasmuch as the usual attendant of the patient was absent and she was extremely anxious and nervous, I decided to remain during the night and asked that I be shown to my room. This was 11 o'clock. At 8 o'clock in the morning I was awakened and informed that my services were needed. Two or three liberal actions had been secured from the bowels; the patient had rested in spite of this interruption comparatively well, sleeping a good part of the time; occasionally disturbed by an unusually severe pain. The rest, however, had been pronounced. Digital examination revealed a complete dilatation and the second stage of labor well advanced. The pains soon became very frequent, long and severe. The bearing down positive. At once commenced the administration of chloroform, preceding it by a stiff toddy, giving free inspiration during the pain with a good mingling of air. Relaxation was rapid and the obtundity of pain produced by the chloroform was profound and this assisted the disposition to bear down and within an hour an unusually large child, the first boy, was born. Placenta followed soon afterwards. Contraction of the uterus was complete. The patient gave assurance of the fact that she had never had so easy a time; that she had hardly known what pain was. It will be observed that the forceps were not necessary. Another purgative dose of oil was immediately ordered and instructions given to the nurse to give a small dose of bromid and chloral if necessary to secure rest during the day.

The patient from the beginning was given whatever she wanted to eat, bearing in mind only that excessive quantity should not be given at any time, owing to the fact that digestion would not be as energetic in bed as in health; in other words, the puerperal state does not preclude good food. The patient ought to be extra well fed in order to build up against the long drain and pressure under which she has labored; besides she has to meet an emergency in the direction of feeding two people instead of one, and this should be constantly remembered. Within five days she might safely have sat up. Suffice it to say that she made the best recovery in her experience. She thrived and her baby thrived better than ever before. It is needless to say that she from this time forth was a convert in favor of elimination, tranquilization, rest and freedom from pain, together with the best of food as a series of essentials to the successful emergence from the puerperal state.

I close this rambling paper by presenting the following conclusions:

1. Every pregnant woman throughout the entire period of her pregnancy should have the most careful attention given to her organs of elimination and to proper exercise.

2. Her nerve force throughout the ordeal must be economized, and particularly is this necessary during the last days and hours of her engagement.

3. The well being of herself and her child is involved in this matter of elimination, exercise and tranquilization.

4. Rest is the great encourager of repair as well as growth; repair to the exhausted force of the woman, thus assisting the proper growth of the unborn child.

5. Pain long continued is dangerous, particularly to those not well endowed by nature for the bearing of pain, and as we never think of ignoring the element of shock in our surgical injuries, no more should we ignore it in the parturient state.

6. The rasping destructive injury to the grosser tissues of the human body are often observed by all surgeons. The more complete the surgical management of the case, the completest possible rest after the injuries favors the completest healing, and yet scars may remain.

7. We should save the nervous systems of the mothers of the world from the rasping, destructive traumatisms produced by labor, and at the same time we should favor rapid repair, never losing sight of the fact that while the healing may be complete, scars yet remain, and in nerve tissues are much more difficult to recover from and are accompanied by greater interference with proper performance of function than in other more vulgar tissues.

8. Balmy sleep is not only "tired nature's sweet restorer," but also the restorer of burdened, fretted, fagged out, wounded, wrecked nerve structures.

9. Graves, the great Irish physician only asked that there be placed upon his epitaph, "He fed fevers." Every thoughtful, warm-blooded, scientific and helpful physician might well ask that there be placed upon his tomb the epitaph, "He gave to his beloved sleep; he saved his patient from pain; not recklessly but intelligently, judiciously, thoughtfully, humanely."

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SATURDAY, AUGUST 26, 1893.

JEAN MARTIN CHARCOT.

Throughout the civilized world, wherever the language of medicine is understood, there is sincere regret that CHARCOT is no more. This distinguished medical man was graduated in medicine at Paris in 1853, and died at Morvan, France, August 17, 1893. He was director of the great Hôpital La Salpétrière at the time of his death, in which institution he had been interne forty years ago. His residence was in the ultra fashionable quarter, the Faubourgh St. Germaine.

He early commenced the study of difficult questions, turning his attention especially to diseases of the liver and spinal cord. The list of his works in the Index Catalogue is a long one, and the less elaborate studies will be found scattered throughout neurological literature.

The current press dispatches from Paris give the following general statement:

"He organized in 1879 an anatomo-pathologic museum, a laboratory with photographic apparatus, hydrotherapic rooms, and began with a series of lectures a clinical course on nervous diseases which has been translated into all the living languages. In 1883 he was a member of the Académie des Sciences, a member of the Clinical Society of London, and frequently received applications for consulting visits from the courts of Europe.

Locomotor ataxia, St. Vitus' dance, hysteria, hypnotism, an infinity of disorders and apparently mysterious effects, received from his patient investigations unexpected enlightenment. His pupils adored him. Marks of distinction were literally showered upon him from sovereigns and learned societies of all nations.

He retained an admirable faith in science, despite the disillusions which were inevitable. He found pleasure only in the thought that he might contribute a stone to the mysterious edifice which would be completed in the distant future.

He published in 1853 "Etudes pour servir à l'histoire de l'affection décrit sous le noms des nodosities des jointures, goutte Asthenique primitive, rheumatisme articulaire Chronique," and in 1857, "De L'Expectation en Médicine;" in 1860, "De la Pneumonie Chronique;" in 1867, "La Médicine Empirique et a Médicine Scientifique," a parallel between ancient and modern methods; in 1868, "Leçons Cliniques sur les Maladies des Vieillards et les Maladies Chroniques;" in 1873, "Leçons sur les Maladies du Système Nerveux;" in 1875, a second edition, with plates and figures, of his work on the diseases of the nervous system; in 1877, "Leçons sur les Maladies du Foie, des Voies Biliaires et des Reins," and numerous essays in the *Archives de Physiologie*, of which he was a director.

His capacity for incessant labor was amazing. In 1878 he produced the "Iconographie Photographique de la Salpétrière;" in 1880, a great treatise on "Les Maladies du Cerveau;" in 1881, a study of "L'Albuminurie;" in 1884, another great work on the nervous system; in 1887, in collaboration with RICHER, one of his pupils, who was a skillful artist and is a famous physician, "Les Démoniaques dans l'Art."

There is not a serious work on nervous diseases which is not studied with references to CHARCOT. There is not a practicing physician at the present time free of indebtedness to the lessons of CHARCOT."

And to American physicians, it may be added, a visit to Paris will not be the same since CHARCOT has gone. His mastery of his chosen field, his genial manner, his welcome to strangers and his wonderful diagnostic powers, caused him to be much sought by foreigners, and his decease leaves a vacancy not easily filled.

STUDIES OF HEREDITY.

The recent translation and publication of PROF. WEISMAN'S essays upon heredity, and kindred biological problems, has opened anew the very interesting controversy which has centered about his theories. DR. WEISMAN is a professor of physiology and biology at the University of Freiburg, who has for many years made very exhaustive studies of the problems of heredity. His conclusions differ widely from many of the popular theories, and are considered the most scientific and candid studies published. In some of his last essays he points out the errors of his former theories, and the way in which he made them, and asserts that all scientific facts depend on theories which are frequently found to be wrong, and are given up for more accurate hypothesis.

He affirms that theories alone are valueless without a firm basis of facts, and that a collection of facts without some theory of coherence or relation are worthless. Theories are plummets with which to sound the depths of the ocean of unknown phenomena. He claims that his theories of heredity are supported by the present knowledge of this subject, but are open to revision and correction from further study and research.

One of these theories is that the reproductive germ cells are practically immortal and are transmitted from generation to generation without

variation. The substance of the germ cells, the germ-plasma, has remained in perpetual continuity from the first origin of life. The extreme variations to which the organism is subjected, do not alter the germ cells, and reappear in the next generation. The germ plasm or substance of the reproductive cells continues the succession of the species, while natural selection and chemical fluctuations of the molecules of the organism vary widely, changing the individual. Hence the transmission of acquired characters is impossible, for the germ plasma is not formed anew in each individual. He believes that heredity depends on the fact that a small portion of the effective substance of the germ plasm remains unchanged during the development of the ovum into the organism, and this part of the germ plasma serves as a foundation from which the germ cells of the new organism are produced. The germ plasma may be represented as a root stock from which plants arise at intervals, representing the individuals of successive generations. This germ plasma is derived from that which preceded it, and its molecular constitution can not depend upon the individual in which it happens to occur, but such individuals only form the nutritive soil at the expense of which the germ plasma grows. The tendency of heredity of which the germ plasma is the bearer, depends upon this very molecular structure, and hence only those characters can be transmitted through successive generations which have been previously inherited, viz., those characters which were potentially contained in the structure of the germ plasma. It also follows that those other characters which have been acquired by the influence of special external conditions during the lifetime of the parent cannot be transmitted at all.

These conclusions are studied and exemplified in a very conclusive way. The re-appearance of like qualities of parents in the children are explained by environment, nutrition, natural selection and other forces. He urges very emphatically that mutilations and organic defects of the body can not be transmitted, because contrary to the doctrine of survival of the fittest.

The natural tendency is to eliminate and throw out the defectives and degenerates from injury and disease, and it would be opposed to nature to perpetuate them to the next generation.

Lessened vigor, and incapacity to resist adverse influences appear in the children followed by early death. The direct transmission of disease germs which fasten themselves to the sperm or germ cell, and are thus transmitted from one organism to another, are proved to be highly probable facts. The disease of the silkworm is transmitted in this way, and the tuberculosis, syphilis, and smallpox germs, may in all probability follow the same law of transmission. Artificially produced epilepsy is explained in certain cases as following direct from microbic origin which is transmitted in this way. The two parental germ plasms are very complex substances, and consist of a number of ancestral germ plasms of different proportions, which combine in different degrees of strength. From these combinations different ancestral forces are increased or retarded; along this line, natural selection separates and breaks up, or perpetuates the germ cells.

Many of these studies and theories have an intense interest to every physician. The author has an exceedingly frank way of presenting his conclusions, and the apparent facts on which they are based; claiming only their probable correctness, and inviting the reader to join with him in farther study. It is evident to the reader that these complex biological theories, are no more fanciful than those which daily confront him, in the practice of medicine. Also, if the many medical problems were discussed with the scientific breadth and frankness of this author, we should have less to unlearn and put aside in daily study.

THE YELLOW FEVER.

On the morning of the 10th August the country was startled by the announcement of two deaths from yellow fever having occurred in Pensacola. On July 22 the Spanish steamship *Leonora* arrived; on the 26th a sailor was taken to the hospital; on 27th a second, on 28th a third, on 29th a fourth. Two were discharged, and by the 1st August the two remaining cases had developed into yellow fever; the vessel was then sent to the Gulf Quarantine Station.

This was practically the first announcement for years that the disease had passed beyond the quarantines. The arrival of vessels infected with yellow fever at points on the Gulf and at South Atlantic ports has occurred almost weekly for the last eight weeks. The announcement of the deaths at Pensacola was made by the Board of Health, and even if the Board were mistaken in one case, at least one of the cases was regarded as suspicious by some of the best yellow fever experts in the country. Being thus authenticated, it naturally created a panic and an exodus from the place of all those who could get away; with the consequence of the quarantine of other cities and States against Pensacola; and it looked for a day or two as if the country was going to suffer from "shot gun quarantine" and the horrors incident thereto. The action of the Pensacola Board of Health was in striking contrast with the action of similar bodies previous to 1884, when as a rule efforts were made to hide the existence of a disease, and yellow fever was not pronounced epidemic until more deaths occurred in a week from that disease than from all other causes. One point of the controversy between the

Sanitary Council of the Mississippi Valley and a Board of Health was the non-reporting of the existence of cases in a certain locality, thereby causing a quarantine by that organization against that place.

The States in the Sanitary Council organization in April, 1879, agreed to promptly report the first cases of yellow fever. The American Public Health Association also adopted a like measure in 1884. It was not, however, until DR. JOSEPH HOLT became President of the Louisiana State Board of Health that the custom became general, as he announced promptly all authenticated and even suspicious cases.

The situation was intensified a few days after the Pensacola affair, by the announcement that DR. BRANHAM of the Marine Hospital Service had yellow fever at Brunswick, Georgia. Late in June the captain of the bark *Anita Berwind*, died of yellow fever on Satila river, near Brunswick. DR. CARTER, of the Marine Hospital Service was sent there to prevent its spread. DR. BRANHAM relieved DR. CARTER, and soon after was attacked by the disease, and on Aug. 19, died. The last time Brunswick suffered from yellow fever (1875) the first death occurred on August 20th. The most experienced yellow fever experts have been in charge for the last two weeks and every possible precaution has been taken to prevent the spread of the disease. As we go to press the dispatches announce another case of yellow fever at Brunswick, and a general exodus from that place in progress.

The highest point north that yellow fever has occurred in the valley of the Mississippi was in August 1854, when a patient came up the river on a steamer from New Orleans to Rock Island, and two nurses who attended him contracted the disease and one of them died. Going farther south in 1873, four railroad laborers at Centralia, who were transferring hides which had been sent from Shreveport, where yellow fever had prevailed, were attacked by the disease. In 1878, one hundred and five refugees from the yellow fever districts suffered with yellow fever in different parts of the State north of Cairo; of these there were twenty-four deaths, the greater portion of them occurring in the city of Chicago—and in not a single instance did those who attended them contract the disease. In that year a number of the attendants at the quarantine station below St. Louis contracted the disease. It is a well established fact that yellow fever will not spread unless there has been a continuous mean temperature of upwards of 70° for some considerable time. It is safe to assume from the experience of the past and judging by the temperature, that yellow fever will not spread this time anywhere north of St. Louis and by September 1st, anywhere north of the Ohio river. Fortunately for the State of Florida, and for the country, that State now has a State Board of Health, and a State health officer of great experience and untiring energy.

ANIMAL EXTRACTS IN EARLY MEDICAL ANNALS.

The modern use of prepared animal organs and animal extracts has probably not yet attained to such therapeutic rank as would lead the Committee on Revision to introduce this distinct class of remedies into the National Pharmacopœia. And yet for such action respectable authority and precedent are not wanting, since in the Dispensatory made by the "College of Physitians" of London, as we learn from the famous edition of "NICH. CULPEPER, Gent. Student in Physick," (of which the second edition was published in 1650), there was an entire section devoted to "Parts of Living Creatures and Excrements," from which possibly some *fin de siecle* clinician might even now obtain a few available hints that might direct his investigations for new specifics, as he will find some curious precedents for those lately brought into use. Thus *Cerebrine* is anticipated in the following: "The brain of Sparrows being eaten provoke lust exceedingly." "The brain of a Hare being rosted helps trembling; it maketh children breed teeth easily, their gums being rubbed with it; it also helps scaldheads and falling off of hair, the head being anointed with it." BROWN-SEQUARD'S *Spermine* is suggested by this note: "Cocks' stones nourish mightily, and refresh and restore such bodies as have been wasted by long sickness; they are admirable good in Hecktick fevers, and (GALEN'S supposed incurable) Marasmus, which is a consumption attending upon a Hecktick fever; they encrease seed and help such as are weak in the sports of Venus." The next is of similar but more potent character: "The yard of a stag helps fluxes, the bitings of venomous beasts; provokes urine and stirs up lust exceedingly." *Cardine* is possibly prefigured in this paragraph: "The bone that is found in the heart of a Stag is as soveraign a Cordial, and as great a strengthener to the heart as any is, being beaten into a powder and taken inwardly; also it resists pestilences and poison." The next might be termed *Pneumonine:* "The lungues of a Fox well dried (but not burned) is an admirable strengthener to the lungues; see the Lohoch of Fox lungues." *Hepatine* is forestalled as follows: "The liver of a Duck stops fluxes and strengthens the liver exceedingly. The liver of a Frog being dried and eaten, helps quartan agues, or as the vulgar call them third-day agues." The next might be termed *Vesicine:* "A Sheep's or Goat's bladder being burnt, and the ashes given inwardly helps the *Diabetes*, or continual pissing." Among the peculiar remedies may be noted "Unicorn's horn;" "the head of a cole-black Cat, burnt to ashes in a new pot;" "the skul of a man that was never buried" beaten to a powder and given inwardly; "the fat of a man" used as an ointment and powdered Mammary for internal use.

Suggestions are made elsewhere with regard to the

use of centipedes, woodlice, earthworms, land scorpions, grashoppers, the flesh of vipers, for various morbid states, with much apparent confidence in their alleged virtues.

Another work which appeared about the same time as the preceding, was, "Health's Improvement; or Rules Comprizing and Discovering the Nature, Method and Manner of Preparing all Sorts of Food used in this Nation." It was printed at "The Sign of the White Horse in Paul's Churchyard 1655," and was written by "that ever famous THOMAS MUFFETT, Doctor in Physick," but it did not appear until after the death of the author, when it was corrected and edited by CHRISTOPHER BENNET, doctor in Physick and Fellow of the College of Physitians in London." From this interesting work we will take but two therapeutic hints: "Pithmarrow running all along from the hinder brain (whereof no doubt it is a portion) to the end of the backbone or chine of beasts, is no doubt much harder and drier than the brain itself, especially towards the further end of the back; which dryness makes it less loathsome to the stomach than brains are; yea, furthermore, it strengtheneth that body which is able to concoct it. Many are of opinion that Cawdles made strong with the pitte of a Steer and yolks of newlaid eggs, do by a secret property restore nature, and recover the weakness of loyns caused by venery. MONTAGNANA maketh a singular confection of divers marrows to that purpose, which I will not set down in English, least wantons be too bold to follow their follies."

Thus history repeats itself, even in therapeutics. Upon reviewing the remedies in use by the leading practitioners of medicine two centuries and a half ago, one can sympathize with the author of "Tristram Shandy," who declared that "the physicians here are the errantest charlatans in Europe or the most ignorant of pretending fools. I withdrew what was left of me out of their hands and recommended myself entirely to Dame Nature."

Possibly the willingness of the Pilgrim Fathers to leave their former homes and settle in the wilderness was in some measure to be ascribed to the medical practice which prevailed in Europe at the time; if so it is highly appropriate in this Columbian year, to make a claim for the tardy recognition of the part which medical science had in stimulating exploration and emigration in the sixteenth and seventeenth centuries.

CHOLERA.

The intense heat that has prevailed in Europe during the past week has caused an increase of cases of cholera, and its spread to hitherto uninfected localities. There are now twenty-six districts infected in Russia, and within the last week there has been a decided increase of cases in Moscow and St. Petersburg. The official report for the week past, shows a total of 2,372 cases and 951 deaths. The express train service between Russia and Bulgaria, Turkey and Servia has been suspended. Express trains now run between Belgrade and Paris only. In France there has also been an increase and a marked tendency to spread to the interior from the south. There has also been an increase at Naples, and the disease has spread to Salmona, Campobella and other villages in Italy. So far but few cases have been found in Spain. The Austrian Government is charged with concealing cases, for commercial purposes, in Hungary. There is undoubtedly an increase in Austrian Galicia. Cholera has also appeared at Brabilio, Solina and Galatz in Roumania. As expected there was an increase of cases at Antwerp. The Imperial Board of Health announces there have been thus far this summer only four cases of cholera in Germany. Three of the persons attacked died. These are reported as having eaten tainted meat imported from districts in Russia in which cholera has prevailed. The following extract from a recent Berlin letter will explain the situation.

"Although the authorities are taking unusual precautions to prevent and suppress cholera, no disturbance of railway or other traffic is apparent. Only the emigrants from the stricken districts of Russia are disinfected. If the emigrants are destitute they are sent at the public expense to America or elsewhere. The orders to turn back all destitute emigrants trying to cross the Russian frontier have failed to accomplish much. By one kind of fraud or another the steady stream across the border is kept in motion.

In Berlin the emigrants are swindling the Relief committee and other people ready to help them. No matter how much money they show at the border to facilitate their admission to the country, they are likely to delare themselves destitute as soon as they reach Berlin in order that they may have their expenses paid."

At Bremen the embarkation of Russian emigrants on the North German Lloyd steamships has been prohibited. This should have been done before. Why should this country receive immigrants from cholera infected countries? We are constantly running the risk of cholera, at the same time adding thousands to our already great number of unemployed. While it is true great precautions are taken, still there is danger.

Upon the whole the situation is favorable, particularly when it is taken into consideration that there are so many places that are infected, and with the exception of Russia, the disease is practically controlled by the extraordinary efforts made by the different governments. Cholera is thus shorn of much of the suffering and loss of life which has heretofore followed in its track. The probabilities are that within a short time there will be a decrease of the pandemic.

No new cases occurred among the *Karamania's* passengers quarantined on Hoffmann Island, and the same were discharged after being there eighteen days. There is still danger, and there is still need for vigilance. The American quarantine system is on trial.

DISINFECTION OF PHTHISIC SPUTA.

With the progress of bacteriological knowledge, come the various practical suggestions that make such knowledge useful to mankind in preventing the spread of infectious diseases, and rendering them less virulent. It is now well known that the phthisical sputa is the principal means of propagation of tubercle, outside of the body. Clinical observation long ago demonstrated that persons in close personal contact with phthisics for a protracted period of time were extremely liable to contract the disease, and now that we know the cause, we should quickly employ effective means of destruction of the fatal bacilli.

REMOUCHAMPS (*Revue des Sciences Medicales*, July, 1893), has employed carbonate of sodium in boiling water as a cheap and practical means of destroying the tuberculous contents of spittoons and particularly of handkerchiefs. He demonstrated its efficiency by an experiment as follows:

On some squares of linen he spread the expectoration from phthisical patients and demonstrated the specific bacilli in great abundance. After drying, he placed these cloths in a vessel and sprinkled them thoroughly with soda carbonate, and poured on them two liters of boiling water, in which they remained during the night. The next morning he expressed the contents of the linen squares into a glass vase. Three guinea pigs received an intraperitoneal injection of two cubic centimeters of the liquid taken from the bottom of the vase. Four months afterward neither of the three animals had become tuberculous.

This principle is used in several of the European hospitals in the disinfection of spittoons. BARD (*Revue des Sciences Medicales*, July, 1893), has invented a sort of galvanized iron wire crate capable of holding sixteen spittoons. These are placed in a tank of boiling water for eight to ten minutes, and they require no watching or special attention. BARD believes that carbonate of soda is unnecessary.

In phthisic wards, dry sweeping should not be practiced, for it is well known that sweeping may put dried sputum in suspension in the air. When a wooden floor is necessary for such wards, the joints should be kept well calked with some terebinthinate substance or frequently kerosened. The parquetrie floors are superior to any other, as they have no open crevices. The use of the broom should be forbidden. Frequent washing the floor with antiseptic solutions and drying with the squilgee will be found useful. The squilgee, as is well known, is made of a piece of wood having a strip of rubber set in a groove in its under part, and well mounted on a handle.

Handkerchiefs used by phthisics should be well powdered with carbonate of soda and plunged in boiling water for ten minutes, after which, at convenience, they may be safely sent to be laundered with other linen.

SPECIAL TRAIN OF THE JOURNAL.

The special train of the JOURNAL OF THE ASSOCIATION for the Pan-American Medical Congress will leave Chicago at 8 A. M. Sept 3, from the new Illinois Central depot, 12th St. and Park Row. Buy your tickets over the "Big 4" at the excursion rate announced elsewhere. The railroad company promises that the accommodations of this train will be the best they can furnish.

HEALTH OF CHICAGO FOR THE FIRST THREE WEEKS IN AUGUST.

Week Ended:	Total Deaths.	Under Five Years.	Death Ratio per 1,000.	Cholera Infantum.	Other Diarrhœal Diseases.	Diphtheria.	Scarlet Fever.	Enteric Fever.	Cerebro-Spinal Meningitis.	Whooping Cough.	Phthisis.	Pneumonia.	Bronchitis.	Gastro Enteritis.	Enteritis.
August 5	646	394	21.32	151	50	11	6	18	7	9	45	15	6	.	.
" 12	752	395	24.89	181	52	8	2	17	8	10	42	16	12	30	14
" 19	563	315	18.58	108	32	15	2	14	13	4	48	16	18	35	18

From the foregoing it will be seen that the health of Chicago for the three weeks under consideration has been very good, especially for the last week. In fact, in no year for the last twenty-five has the death rate been so low for the time under consideration. The health of the other large cities of the country is also good at this time.

SOCIETY NEWS.

The Association of Military Surgeons of the National Guard of the United States.

Abstract of the Proceedings of the Third Annual Meeting, held in Chicago, Ill., August 8, 9 and 10, 1893.

(*Continued from page 287.*)

THIRD DAY—MORNING SESSION.

Dr. CHARLES B. EWING, U. S. Army, read a very interesting paper entitled

THE SELECTION OF THE SOLDIER,

in which he drew the following conclusions:

1. That the rules and regulations governing the examining surgeon in the physical examination of the recruit, be separate and distinct from those that govern the recruiting officer, who is not a medical man.

2. That the room in which the examinations are made should not be less than twenty feet square, well lighted and ventilated.

3. That the unit of measure be as small as possible, and that the metric system be used.

4. That the recruit be measured in the horizontal instead of the upright position, as at present, so that the large number of men now rejected as being below the standard be saved to the service.

5. That this method of measurement be used so that the exact value of height be obtained in its relation to the other physical equivalents of age, as they are governed by nativity.

6. That weight be determined by a uniform system, the

metric, and that the apparatus consist of scales of the simple bar and weight pattern rather than the old style.

7. That special pains be taken to fix the physical equivalent, so that its proper relation to height, weight and age can be determined for each separate nationality.

8. That the chest girth be changed to conform to the present standard of weight and height.

9. That special attention be given this, so that proper ideas may be obtained in the relations of this physical equivalent of weight, height and age, as it affects each particular race in this country.

10. That data be collected from our present statistics in relation to age, weight, chest girth, chest expansion and capacity, of each separate nationality, so that a better and more exact basis of selecting the recruit can be made.

11. That the spirometer or some modification of it be used as an aid in determining vital chest capacity, also that calipers be authorized so as to measure depth of chest.

12. That the present method of determining hearing be modified.

13. That the test for vision be changed, and that the prisoptometer be placed in general use for the determination of simple refractive defects.

14. That it be no longer obligatory to determine with such exactness the age and size of piles, but that this condition be left to the discretion of the surgeon.

15. That the paragraph relating to varicocele be expunged, as our present instruments of precision can not measure the fine pathological distinctions insisted upon.

Dr. FRANK R. KEEFER of Fort Stanton, N. M., contributed a paper entitled "Observations on the Physical Examination of Recruits," which was referred to the Committee on Publication, without being read, in the absence of the author.

THIRD DAY—AFTERNOON SESSION.

At this session it was decided to publish a monthly Military Medical Journal, to be devoted to the professional interests of the Army, Navy, Marine Hospital Service and National Guard of the United States. The publishers to be the F. A. Davis Company of Philadelphia.

Dr. CHARLES SMART, U. S. Army, contributed a paper on

THE MEDICAL DEPARTMENT OF THE ARMY,

which was read by Dr. B. J. D. IRWIN, U. S. Army, in the absence of the author.

The great war of the rebellion demonstrated that an efficient system for the care of the wounded was one of the grand divisions of military sanitation, and continued efforts have been made to build up our methods on the foundation of experience which was then gained; that war enlarged our views, and it lasted long enough to enable us to develop a system based upon the enlargement, and to show us what was needful to the successful carrying out of the system. We began the war with methods that were borrowed from Europe. We ended with methods that were developed by the cries of our wounded for relief.

In 1887 a law was passed establishing a hospital corps, and since then the best energies of the department have been devoted to perfecting the organization of this corps and formulating methods by which it will accomplish its work, not only under conditions of peace, but under those of Indian or of modern warfare.

A paper was read on

THE DIAGNOSIS TAG IN THE FIELD,

by Dr. VALERY HAVARD, U. S. Army. The diagnosis tag conspicuously fastened to the clothing of the patient shows at once that he has already received first aid. The brief entries written upon it give further information as to the identity of the patient, the nature of the disability, and the treatment pursued. But these entries, doubtless written in a hurry, are perhaps not very legible; they may have been defaced by blood, rain or dirt, hence the necessity of using a tag that will give as much information as possible at a glance and independently of any writing upon it. For this purpose colors seem to be most useful. In the French, German, Italian, and perhaps other European armies, two kinds of tags are described, one white, the other red. The white tag denotes that a patient is so desperately wounded as not to be transportable; the red, that the patient can stand transportation. Thus, a look at the tag gives an idea of the gravity of the injury, and to some extent of what can be done with the patient. The author's tag consists of a white and two colored borders; on the body are the printed headings of the entries to be made; the borders are separated from the body by a perforated line so as to admit of being very easily torn off. The left border is red, and the right blue. On the red is printed "transportable," and on the blue "not transportable." In case of a simple flesh wound, whether the patient is or is not able to walk, both colored borders are torn off, leaving only the white body of the tag. If a man is severely wounded, unable to walk, but able to be transported, the blue border is torn off, leaving the red. If a man is desperately wounded and cannot be moved without extreme danger to life, the red border is torn off leaving the blue.

Dr. LAWRENCE C. CARR of Ohio National Guard, Cincinnati, followed with a paper on

THE QUALIFICATIONS FOR AND THE STATUS OF A MEDICAL OFFICER IN THE NATIONAL GUARD.

He said but two States in the Union required any qualification from a surgeon of the National Guard. All that is necessary in the other States is for the commanding officer to suggest the name of some one in his discretion to the Governor. Another factor was the great lack of courtesy from the heads of the military departments of different States to officers in other States, tending to impair the service. It does not seem to be the policy of the War Department at present to allow the regular service and the National Guard to come in contact.

Dr. CHARLES E. WOODRUFF, U. S. Army, read a paper entitled "Military Medical Problems."

Dr. A. H. OHMANN-DUMESNIL of St. Louis, Mo., read a short paper on

THE PREVENTION OF CUTANEOUS PARASITIC DISEASES IN SOLDIERS,

in which he said the recruit should take a full bath and after this a careful inspection of his body made. His hair should be cropped close and always kept so. His clothing should be changed as often as compatible with circumstances, and should not only be washed but subsequently subjected to dry heat so as to thoroughly sterilize it. Such as operation can be easily carried out and will insure thorough cleanliness. The bath should be taken at least once a week, and upon each occasion the surgeon should inspect the soldier before he is permitted to assume his clean clothing. After the bath a light sponging of the entire body, scalp and face should be made with some antiseptic. Under no excuse should soldiers be permitted to escape the bath, disinfection and subsequent inspection. Infected cases should be treated immediately and segregated, thus removing to a distance the focus of infection. The observance of some such method would practically free a body of soldiers of filth, vermin and parasitic disorders, and, at the same time contribute to making them more alert, attentive to their duties, more efficient and cheerful and correspondingly better disciplined.

The last paper on the program was read by Dr. GEORGE H. HALBERSTADT of Pottsville, Pa., entitled "Camp Cooking Stoves."

The following officers were elected:

President—Col. N. Senn of Chicago.

First Vice-President—Col. B. J. D. Irwin, U. S. Army.

Second Vice-President—Col. Louis W. Reed of Norristown, Surgeon General of Pennsylvania.

Secretary—Col. E. Chancellor of St. Louis, Mo.

Treasurer—Major Lawrence C. Carr of Cincinnati, O.

A vote of thanks was extended to the Illinois State National Guard, to Dr. and Mrs. SENN for the admirable manner in which they entertained the members of the Association; after which the Association, on motion, adjourned to meet in Washington, D. C., the first Tuesday in May, 1894.

American Electro-Therapeutic Association.—The following is the preliminary program of the American Electro-Therapeutic Association, which will hold its third annual meeting in Chicago, September 12, 13, and 14:

Discussions:—1. "What are the Possibilities of Electricity in the Treatment of Fibroid Growths." Discussion will be opened by Dr. J. H. Kellogg of Battle Creek, Mich. The

following among others have been asked to take part: M. le Docteur Georges Apostoli of Paris; M. le Docteur Georges Gautier of Paris; Dr. La Torre of Rome; Dr. Augustine H. Goelet of New York; Dr. A. Lapthorn Smith of Montreal; Dr. Franklin H. Martin of Chicago; Dr. Margaret A. Cleaves of New York; Dr. G. Betton Massey of Philadelphia; Dr. George F. Hulbert of St. Louis; Dr. E. L. H. McGinnis of New York.

2. "The Influence of Frequency of Interruptions and Character of Induced Current Waves upon Physiological Effect." Discussion will be opened by Professor J. W. Morton of New York. The following among others have been asked to take part: M. le Prof. d'Arsonval of Paris; Prof. Du Bois Reymond of Berlin; Mr. Newman Lawrence of London; M. le Docteur Larat of Paris; Prof. Edwin J. Houston of Philadelphia; M. le Docteur Apostoli of Paris; M. G. Weisse of Paris; Dr. W. J. Herdman of Ann Arbor, Mich.; Mr. J. J. Carty of New York; Dr. J. H. Kellogg of Battle Creek, Mich.; Dr. A. H. Goelet of New York; Dr. S. Weir Mitchell of Philadelphia; Dr. A. D. Rockwell of New York; Dr. Frederick Peterson, of New York; Dr. W. F. Hutchinson of Providence, R. I.; Dr. Georges Gautier of Paris; Dr. Franklin Martin of Chicago.

Papers:—"The Nutritional Effects of Statical Electricity." By Prof. W. J. Morton, M.D., New York.

"Electro-Medical Eccentricities." By Newman Lawrence, M.I.E.E., London, England.

"The Graphic Study of Electrical Currents in Relation to Therapeutics." By J. H. Kellogg, M.D., Battle Creek, Mich.

"The Action of the Continuous Current within the living Tissues as distinguished from the local Polar Action." By Prof. W. J. Herdman, M.D., Ann Arbor, Mich.

"The Therapeutic Application and the Theory of Alternating Currents." By Dr. Georges Gautier, Paris, France.

"The Treatment of Fibroid Tumors with Electricity." By Dr. Georges Gautier, Paris, France.

"Induction Coils." By Mr. A. E. Kennelly, of the Edison Laboratory.

"Electrolysis in Tumors of the Bladder." By Robt. Newman, M.D., New York.

"The Present Position of Electricity in the Treatment of Ectopic Gestation." By A. Brothers, M.D., New York.

"Electro-Therapeusis in Salpingitis." By W. B. Sprague, M.D., Detroit, Mich.

"Report of a Case of Ascites cured by Galvanism." By Holford Walker, M.D., Toronto, Canada.

"The Primary Action of the Galvanic Current on the Blood. It increases the amount of Ozone it contains, as shown by Chemical Tests of the Blood in the Arteries." By J. Mount Bleyer, M.D., and M. M. Weil, M.D., New York.

"The Conservation of Energy as a Successful Factor in Electrotherapy." By Horatio R. Bigelow, M.D., Philadelphia.

"Synovitis treated by Cataphoresis." By F. H. Wallace, M.D., Boston, Mass.

"The Use of Static Electricity in the Treatment of Incipient Insanity." By W. F. Robinson, M.D., Albany, N. Y.

"Further Study of Electrical Anæsthesia and Frequency of Induction Vibration." By W. F. Hutchinson, M.D., Providence, R. I.

"The Absorption of Fibroid Tumors by Mild Electric Currents." By R. J. Nunn, M.D., Savannah, Ga.

"Some Observations on the Fine Wire Coil or Current or Tension." By H. E. Hayd, M.D., Buffalo, N. Y.

"The Treatment of Subinvolution by Electricity." By C. G. Cannaday, M.D., Roanoke, Va.

"Successful Treatment by Electrolysis of four additional Cases of Œsophageal Stricture with Exhibition of Two Cases." By D. S. Campbell, M.D., Detroit, Mich.

"The Treatment of Dysmenorrhœa by the Galvanic Current." By A. Lapthorn Smith, M.D., Montreal, Canada.

"Notes upon some Uses of Galvanism in Surgery." By W. B. D. Beaver, M.D., Reading, Pa.

Several other papers of equal interest have been promised, but the papers have not yet been received.

MARGARET A. CLEAVES, *Secretary.*

Pan-American Medical Congress.

WASHINGTON, D. C., August, 1893.

The Transportation Committee of the Pan-American Medical Congress, which meets in Washington, D. C., September 5th to 8th, 1893, makes the following announcement in regard to reduced rates for delegates and members of their families from all sections of the United States, also from the Pacific Coast, Ports of Mexico and Central America:

Delegates from the territory of the Trunk Line Association east of Pittsburgh and Erie and Buffalo, will be accorded one and one-third fare for the round trip on the certificate plan.

The lines combined in this territory are as follows:

Grand Trunk Ry., N.Y.C. & H. R. Rd., West Shore Rd., D. L. & W. Rd., N.Y.O. & W. Ry., Pennsylvania Ry., Cent. Rd. of N. J., Ches. & Ohio Ry., Lehigh Valley Rd., N.Y.L.E. & W. Rd., Balto. & O. Rd., Phil. & Read. Rd.

Delegates from points in New England States in the territory of the New York and Boston Lines Passenger Associations, will be accorded one and one-third fare on the certificate plan.

Delegates from points in Central Traffic Association, embracing the territory from Buffalo, Pittsburg and Parkersburg, W. Va., in the East to Chicago, and St. Louis on the West will be accorded one fare and one-third on the certificate plan.

Delegates from points in Southern Passenger Association, embracing the territory South of the Ohio river and Potomac river and East of the Mississippi river will be granted one and one-third fare on the certificate plan.

Delegates from points west of the territory of the Central Traffic Association can avail themselves of the World's Fair excursion tickets as far as Chicago and secure from Chicago the fare and a third on the certificate plan to Washington.

Delegates from South America, Pacific Coast, points of Mexico or Central America, can secure from point of starting round trip tickets to Chicago at the World's Fair rate, either by way of San Francisco or New York. The latter can secure from New York the fare and a third on the certificate plan on application to the ticket offices of either the Penn. R.R. or B. & O. R.R.

The certificates referred to must be secured at the time of the purchase of the ticket to Washington on which, properly signed by Dr. H. L. E. Johnson, Chairman of the Transportation Committee, the reduced rate will be allowed returning. To be more specific the full fare is paid on the going trip to Washington and a two-thirds reduction is allowed when the ticket is purchased in Washington for the return trip. These certificates must be obtained at the ticket offices at the time the ticket is purchased. Be sure to state that you are a delegate and will be in attendance at the meeting. Respectfully, yours,

DR. H. L. E. JOHNSON,
Chairman, Committee Transportation.

1400 L Street, N. W. Washington, D. C.

The Journal Train.

Office of
THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
CHICAGO, August 21, 1893.

To Delegates and Their Friends:—

The Pan-American Medical Congress will convene in Washington, D. C., September 5.

The Pan-American train from Chicago and the northwest, run under the auspices of the JOURNAL, will leave Chicago, 8:30 A.M., Sunday. September 3, via Big Four from Central Station, 12th Street and Park Row. The train will consist of palace sleeping cars, and run through without change via the popular Big Four and the picturesque Chesapeake & Ohio railways, passing through Indianapolis, where the Indianapolis, Peoria and St. Louis delegations will join the train, and at Cincinnati that delegation will also join the train.

Excursion Rates.—A rate of one and one-third fare on the certificate plan has been authorized. Any person attending the Congress can get this rate, Buy a first-class limited ticket to Washington, and take a certificate from ticket agent at starting point, stating you have paid first-class fare going, and when properly signed by the Secretary of the Congress it will entitle you to one-third fare returning.

Persons going via Chicago should buy excursion tickets to Chicago and purchase Washington tickets there.

Be sure that your ticket reads, via the Big Four and the Chesapeake & Ohio Railway, Chicago office, 234 Clark street. Rates always as low as via any other route. Leave Chicago, Big Four railway, 8:30 A.M.; leave Indianapolis,

Big Four railway, 2:55 P. M.; leave Cincinnati, Chesapeake & Ohio railway, 6:15 P. M.; leave Clifton Forge, Eastern time, 7:23 A. M.; arrive Washington, Eastern time, 2:10 P. M.

The Route.—**The service and equipment of the above roads are unsurpassed; all trains are vestibuled, and gas and electric lighted. Dining car service through. The Chesapeake & Ohio is one of the most picturesque routes in America, and passes through 300 miles of river, mountain and canon scenery, unequaled, and from Charlottesville to Washington it passes over a dozen or more of the most noted battlefields of the late war, and through many famous health resorts in the Blue Ridge and Allegheny mountains where stop-over will be granted returning.**

Please notify the undersigned at your early convenience if you will make the trip and what sleeping car accommodations you desire.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
68 Wabash Ave., Chicago,
or "Big 4" office, 234 Clark St

PAN-AMERICAN MEDICAL CONGRESS.

SECTION ON OPHTHALMOLOGY.

Preliminary Program.—The meeting of the Section will be held in the Arlington hotel. The session of September 6th, will be devoted to the discussion of the subject of the "Detection and Correction of Astigmatism," with the reading of papers upon this subject. The meeting of September 7th will in like manner be given to a consideration of the "Detection and Correction of Muscular Errors." Julian J. Chisolm, Executive President, Baltimore, Md.; George M. Gould, English-speaking Secretary, Philadelphia, Pa.; J. Harris Pierpont, Spanish-speaking Secretary, Pensacola, Fla.

September 5th, 3 o'clock p. m. "Some Experiences in Hemorrhagic Glaucoma: Its Progress and Treatment." By S. D. Risley, Philadelphia. "Homeochronous Hereditary Optic-nerve Atrophy Extending Through Six Generations." By George M. Gould, Philadelphia. "Suppurative Processes of the Vitreous." By J. F. Fulton, St. Paul. "A Clinical Study of the Visual Field in Hemianopia." By Charles A. Oliver, Philadelphia. "Glaucoma from Traumatic Causes." By E. Lopez, Havana. "Spontaneous Replacement of a Case of Detached Retina." By J. Wallace, Philadelphia. "Etiology and Early Management of Glaucoma." By G. E. Dean, Scranton, Pa. "Acute Monocular Neuro-retinitis, with Cases." By B. L. Millikin, Cleveland.

September 6th.—"Further Studies of the Cycloplegic Value of Homatropin and Cocain Discs as a Substitute for Atropin and Hyoscyamin." By Casey A. Wood, Chicago. "The Relation of Skiascopy to other Tests for the Determination of Ocular Refraction." By H. V. Würdemann, Milwaukee. "The Necessity for Complete Suspension of Accommodation by Mydriatics in the Adjustment of Glasses." By G. C. Savage, Nashville, Tenn. "A Contribution to Refractive Errors." By J. C. Morgan, Philadelphia. "Astigmatism following Cataract Extractions and other Sections of the Cornea." By Edward Jackson, Philadelphia. "A Few Thoughts about Ophthalmometry, as to what the Javal Instrument will do and what it will not." By Louis J. Lautenbach, Philadelphia. "Skiascopy in Ophthalmometry." By Pedro Lagleyze, Buenos Ayres, Argentine Republic.

September 7th.—"A Clinical Study of Heterophoria." By Hiram Woods, Baltimore. "An Analysis of Fifty Cases of Internal Squint." By H. F. Hansell, Philadelphia. "Some Forms of Anomalies in Eye Muscles." By E. J. Gardner, Chicago. "Affections of the Nose as a Cause of the Want of Concordance of the Action of the Eye Muscles." By W. Cheatham, Louisville. "Further Experiences in Graduated Tenotomy." By Charles H. Thomas, Philadelphia. "Graduated and Complete Tenotomy for the Relief of Heterophoria, with a New Objective Test for Use During Operation." By S. Lewis Ziegler, Philadelphia.

September 8th.—"Treatment of Six Cases of Irido-cyclitis Complicated with Cataract." By Robert L. Randolph, Baltimore. "Electric Therapeutics in Ophthalmic Practice." By L. A. W. Alleman, Brooklyn. "Gouty and Rheumatic Affections of the Eye." By W. Oliver Moore, New York. "The Local Application of Bichloride of Mercury in the Deep Inflammations of the Eye." By W. F. Mittendorf, New York. "Skin-grafting for Malignancy of the Eyelids." By F. B. Tiffany, Kansas City. "The Nomenclature of Blepharitis." By Dudley S. Reynolds, Louisville. "Orbital Tumors." By W. B. Johnson, Paterson, N. J. "Exophthalmus Traumaticus." By Dr. L. F. Love, Philadelphia. "Further Observations on the Eye of the Negro." By C. W. Kollock, Charleston, S. C. "Hemorrhagic or Croupous Iritis." By A. Alt, St. Louis. "A Case of Cysticercus in the Vitreous." By W. Cheatham, Louisville, Ky.

SECTION ON PEDAGOGY.

Provisional Program.—*Tuesday, September 5th.*—The President's Address, "Medical Education in the United States." "The Importance of Physiological Chemistry as a part of Medical Education." By R. H. Chittenden, Ph. D., Professor of Physiological Chemistry, The Sheffield Scientific School, New Haven, Conn. "The Importance of Bacteriological Study to Medical Students, and the Scope of Instruction." By Harold C. Ernst, Assistant Professor of Bacteriology in the Harvard Medical School, Boston, Mass.

Wednesday, September 6th.—At the close of the General Session 11 A. M. —"A Demonstration of the Cæsarean Section and the Porro Operations." By Gustav Zinke, Cincinnati, Ohio. "A Contribution to a Study of Methods of Medical Education in the United States." By Bayard Holmes, The College of Physicians and Surgeons, Chicago, Ill. "Methods of Teaching Clinical Medicine." By F. C. Shattuck, Professor of Clinical Medicine in the Harvard Medical School, Boston, Mass.

Thursday, September 7th.—At the close of the General Session, 11 A.M.— "A Demonstration with Colored Crayon, of Methods of Instruction in Anatomy and Surgery." By M. H. Richardson, Assistant Professor of Anatomy in Harvard University. "The Methods of Medical Education." By Victor Vaughn, Ann Arbor, Michigan. "The Aims and Methods of Medical Education." By W. C. Dabney, University of Virginia.

Friday, September 8th.—"The Relation of Biology to Medical Education." W. T. Sedgwick, Professor of Biology in the Massachusetts Institute of Technology, Boston, Mass. "A Demonstration of the Physiological Action of the Heart." By J. P. Sawer, Cleveland, Ohio.

NOTE:—It is intended to obtain the use of an amphitheater for demonstrations of special subjects. Any contribution to the program of the Section, either by paper or discussion, is solicted from those especially interested in the problem of Medical Education.

CHARLES L. SCUDDER, M.D. *English-speaking Secretary,*
Boston, Mass.
WM. F. HUTCHINSON, M.D.. *Spanish-speaking Secretary,*
Providence, R.I.
J. COLLINS WARREN, M.D., *President.*
Boston, Mass.

SECTION ON MARINE HYGIENE AND QUARANTINE.

Formal Address, by Walter Wyman, Executive President of the Section, Surgeon General of the United States Marine Hospital Service, Washington, D. C. "The Hygiene of Vessels, Commercial and Naval, Including the Question of Ventilation, Heating, Sanitary Arrangements, the Disposal of Cargo so as to Facilitate Disinfection, Steam Disinfection, Food Supply, etc." (Discussion Opened by John J. Cassidy, Ontario, Canada. "Epidemic and Exotic Diseases Propagated by Shipping, What Diseases Should be Quarantined, Responsibility of Nations for Epidemics; India for Cholera, South America for Yellow Fever. Can a Feasible Plan be Devised to Totally Exterminate Cholera? International Intervention to Prevent the Propagation of Cholera or other Epidemic Diseases by Pilgrimages or Immigration." (Discussion Opened by Wolfred Nelson, New York City.) "International Uniformity in Quarantine Regulations." (Discussion Opened by Juan J. Ulloa, San Jose, Costa Rica.) "The Medical Officers of Passenger Vessels; Methods for their Selection, Duties, etc." "The Vital Statistics of Seamen and Firemen. The Question of the Medical Examination of Crews Preparatory to Shipping." "The Supervision of Vessels by Government Medical Inspectors at Ports of Arrival and Departure. Code of Rules for Handling an Epidemic Disease that Breaks out on Shipboard. Disinfection of Passengers and Crew During a Voyage. Location and Arrangement of Ship's Hospitals." "Arrangement of Detail and Equipment of Quarantine Stations: *a*, Inspection Stations; *b*, Local Quarantine Stations; *c*, Refuge Stations. Methods for Handling Infected or Suspected Vessels Interstate and Inland Quarantine. Sanitary Cordons; Camps of Refuge; Camps of Probation. Recent Improvements in Hospitals for Infectious Diseases, Railroad Inspection and Quarantine. Length of Time Vessels Should be Held in Quarantine. Conditions that Should Determine Proclamation of Quarantine Against a Country." "Under what Requirements may Passenger Traffic be Carried on Between a Port Infected with Yellow Fever and a Southern Port of the United States During the Summer with the Least Obstruction to Such Traffic." "What Merchandise should be Considered as Requiring Treatment if Shipped from a Port or Place Infected with Cholera, Yellow Fever or Smallpox?" "Methods of Disinfection: *a*, Persons; *b*, Baggage; *c*, Cargoes; *d*, Vessels. Recent Improvements in Quarantine Appliances; Steam Chambers; Sulphur Furnaces. Liquid Sulphur Dioxide as a Disinfectant. Treatment of Ballast Water; Solid. What Time Should an Infected Vessel be Detained in Quarantine? *a*, For the Cholera; *b*, For Smallpox; *c*, For Typhus Fever; *d*, For Plague; *e*, For Yellow Fever. Methods of Disposal of the Bodies of those that Die While in Quarantine."

SECTION ON RAILWAY SURGERY.

Formal Address, by C. W. P. Brock, Executive President of the Section, Richmond, Va. "Railway Surgery, as a Branch of the Surgical Art," by E. R. Lewis, Kansas City, Mo. "The Nose and Throat Service of the Missouri Pacific Hospital for 1892," by Hanau W. Loeb, St. Louis, Mo. "The History of Railway Surgical Organization," by C. B. Stemen, Ft. Wayne, Ind. "Hot Water in Contusion of the Bones of the Foot and Ankle," by Geo. Chaffee, Brooklyn, N. Y. "Excision of Shaft of Femur following Pathological Fracture," by Alex. J. Mullen, Michigan City, Ind. "Implantation of Senn's Decalcified Bone. Recovery," by B. F. Wilson, Slater, Mo. "The Essential Elements of Ideal Surgery," by B. F. Wilson, Slater, Mo. Paper by T. C. Kennedy, Shelbyville, Ind. Paper by J. N. Warren, Sioux City, Ia. "The Torsion of Arteries for the Arrest of Hemorrhage," by J. B. Murdoch, Pittsburgh, Pa.

SECTION ON DERMATOLOGY AND SYPHILOGRAPHY.

"American Dermatology," by A. H. Ohmann-Dumesnil, Executive President of the Section, St. Louis, Mo. "Lupus, its Excision with Reports of Cases," by B. Merrill Ricketts, Cincinnati, O. "Glycosuria as an Additional Symptom in the Neurotic Origin of Dermatitis Herpetiformis," by James M. Winfield, Brooklyn, N. Y. "A Statistical Record of Nearly Five Thousand Cases of Smallpox," by Wm. M. Welch, Philadelphia, Pa. "The Treatment of Diseases of the Nails," by J. V. Shoemaker, Philadelphia, Pa. "Primary Dystrophies of the Skin," by E. Preble, Cleveland, Ohio. Paper by Geo. Holsten, Brooklyn, N. Y. "Rhinophyma," by Wm. Gotthell, New York City. "Rhinophyma," by A. H. Ohmann-Dumesnil, St. Louis, Mo. "Framboesia" "Yaws," by George Edmund Pierez, British West Indies. "The Question of the Communicability of Leprosy," by Beaven Rake, Trinidad, West Indies. "Some of the Rarer Trophic Lesions in Leprosy," by Beaven Rake, Trinidad, West Indies. "Beriberi en el Cauca," by Evaristo Garcia, Cali, Cauca, Colombia. "Lepra en el Cauca," by Evaristo Garcia and Adolfo Tenoris, Cali, Cauca, Colombia. "El Caratea," by Juan N. Wallis O., and Alfredo Garces y Domingo, Arboleda, Colombia. "A Case of Recurrent Pruritus," by A. H. Ohmann Dumesnil, St. Louis, Mo. "On the Etiology of Eczema," by A. Ravogli, Cincinnati, O.

SECTION ON GENERAL AND ORTHOPEDIC SURGERY.

Address by the Executive President.

"The Treatment of Potts' Disease of the Spine," by A. B. Judson, New York, N. Y. "The Probable Cause of Limp in the First and Second Stages of Hip Joint Disease," by Harry M. Sherman, San Francisco, Cal. "Mechanical Treatment of Osteo-Arthritis of the Knee," by Henry Ling Taylor, New York, N. Y. Paper by Dr. Bernando Herrera, Caracas, Venezuela. Paper by Dr. Juan M. Escolana, Caracas, Venezuela. "Ununited Fracture," by Llewellyn Eliot, Washington, D. C. "Some Points in the Surgical Treatment of Appendicitis," by Augustus P. Clarke, Cambridge, Mass. "A Brief Splint Technology for Surgeons," by Edw. A. Tracy, Boston, Mass. "Reconstructive Surgery," by Thomas G. Maghee, Rawlins, Wyo. "Urethral Polypus in the Male," by R. Menocal, Havana, Cuba. "Simplicity in Surgery." by Robt. W. Johnson, Baltimore, Md. "A Report of Four Cases of Brain Surgery," by Andrew J. McCosh, New York N. Y. "Soudas y Bujras Gercas del Dr. Castano," by Dr. Alberto Castano, Buenos Ayres, Argentine Republic. Paper by Ignacio Placencia, Havana, Cuba. Paper by Ignacio Placencia, Havana, Cuba. "Tratamients quirurgico de la fiebre amarila," by Segundo B. Mateo, Havana, Cuba. "In what Class of Cases is Drainage Required?" by H. O. Marcy, Boston, Mass. "Causation, Pathology and Treatment of Carbuncle," by David W. Graham, Chicago, Ill. Paper by Dr. Martin Herrera, Caracas, Venezuela. Paper by Dr. Miguel A. Leco, Caracas, Venezuela. "Improved

Long Traction Hip Splint, with Proper Method of Applying Counter-Extension," by Henry Long Taylor, New York City. "Improved Apparatus for Potts' Disease," by Henry Long Taylor, New York City. "Apparatus for the Correction of Talipes Equino-Varus and for the Retention of the Corrected Foot," by Henry Long Taylor, New York City. "Practical Orthopedics," by Dr. Noble Smith, London, England. "Observations on the Rotary Lateral Curvature of the Spine, with Special Reference to Etiology and Treatment," by Jacob Teschner, New York City. "Recumbence in the Treatment of Potts' Disease," by John C. Scnapps, Brooklyn, N. Y. "Causes Contributing to Failure in the Treatment of Hip Joint Disease," by A. M. Phelps, New York City. "Some Thomas' Splints with Demonstrations of Principles," by John Ridlon, Chicago, Ill. "Orthopedic Work done at the Vanderbilt Clinic of New York, from January, 1889, to June, 1893," by John Ridlon, Chicago, Ill. "A Case of Acute Arthritis of the Hip of Infants, with some Remarks on the Etiology of the Affection," by Augustus Thornedike, Boston, Mass. "The Orthopedic Treatment of Infantile Paralysis," by L. A. Weigel, Rochester, N. Y. "Gymnastic Apparatus for Scoliosis," by L. A. Weigel, Rochester, N. Y. "Practical Points in the Treatment of Hip Disease," by A. B. Judson, New York City. "The Technique of the Plaster Jacket," by Reginald H. Sayre, New York City. "Club Hand," by Reginald H. Sayre, New York City. "Gastrostomy for Relief of Œsophageal Stricture, by Ernest Laplace, Philadelphia, Pa. "Epithelioma of the Tongue; its Pathology and Treatment," by Lewis Cooper Lane, San Francisco, Cal. "A Contribution to Rectal Surgery and Bloodless Operations on Membranous and Lax Tissues by Means of an Elastic Quilled or Welted Suture," by H. M. Bishop, Los Angeles, Cal. "Hypertrophy of the Prostate," by G. Frank Lydston, Chicago. "The Bacteriological Aspect of Aseptic Surgery," by Robert Reyburn, Washington, D. C. "Laparotomy in the Early Stages of Appendicitis," by I. N. Quimby, Jersey City, N. J. "The Indications Governing the Use of the Various Anæsthetics," by John A. Wyeth.

SECTION ON HYGIENE, CLIMATOLOGY AND DEMOGRAPHY.

PRELIMINARY NOTICE.—The Headquarters of this Section will be at the Hotel Richmond, corner of 17th and H streets, N. W., the proprietor of which, Major F. W. Coleman, has kindly offered reduced rates for members of the Section. The opening address by the president of the Section will be delivered on Tuesday, Sept. 5, at 3:30 P. M., at the meeting place which shall be assigned by the committee on halls. Regular sessions of the Section for the reading and discussion of papers will be held on Wednesday and Thursday, Sept. 6 and 7, from 11:30 A.M. to 1 P.M. and from 3 to 5 P.M., and a final session on Friday, Sept. 8, from 10:30 A.M. to 1 P.M. Through the courtesy of the Surgeon General of the Navy and the Director in charge of the U. S. Naval Museum of Hygiene, that building will be open for inspection by members of the Congress from 10 A.M. to 4 P.M., daily, on Wednesday, Thursday and Friday, Sept. 6th, 7th and 8th.

ALBERT L. GIHON, M.D., U. S. N., Exec. Prest., Washington, D. C.
PETER H. BRYCE, M.D., English-speaking Sec'y, Toronto, Can.
PEDRO JOSE SALICRUP, Spanish-speaking Sec'y, New York City.

"The Climate of Jamaica," by J. C. Phillippo, Kingston, Jamaica. "Les Mesures Prophylactiques Contre les Epidemies," by J. B. Da Lacerda, Rio de Janeira, Brazil. "Practical Measures in the Prevention of Tuberculosis," by Lawrence F. Flick, Philadelphia Pa. "Apuntes Sobre la Patologia del Departmento Fluvial de Loreto," by Leonidas Arendaño, Lima, Peru. "Ojeada Retrospectiva Sobre la Organizacion de la Sanidad en los Ejercitos Españoles," by Felix Estrada y Catoyra, Havana, Cuba. "The Climate of Western North Carolina, with a Consideration of the Relative Value of High and Medium Altitudes in the Treatment of Pulmonary Tuberculosis," by Karl von Ruck, Asheville, N. C. "The Climate of the Santa Cruz Mountains," by James Henry Clark, Jamaica, W. I. "On the Early Detection of Seasonable Climatic and other Treatment of Phthisis," by Charles Denison, Denver, Colo. 'The Distribution of Disease by Isthmian Practice, or the Direct Responsibility of the Republic of Columbia, S. A., in the Burial and Disinterring of the Dead on the Isthmus of Panama," by Wolfred Nelson, New York City. "The Three Climates of Jamaica, B. W. I., its Coast or Tropical, Temperate and Mountain Climates; Jamaica considered as a Winter Island for Health," by Wolfred Nelson, New York City. "A Brief Consideration of Elephantiasis Arabum, as Observed in the Samoan Islands," by John C. Wise, Washington, D. C. "On the Climatology of Egypt," by Dr. Grant (Bey), Cairo, Egypt. "Hygiene and Demography of Jamaica," by James Cecil Phillippo, Kingston, Jamaica. "The Need of Research in Preventive Medicine," by J. M. Postle, Hinckley, Ill. "The Effect of Advanced Civilization on Disease," by W. J. Moody, Plainfield, Iowa. "Necessary Laws that Should be Enacted by the Several States by which Municipal Health Authorities may be Enabled to Control Infectious Diseases;" "The Cause and Prevention of Diphtheria;" "The Limitation and Prophylaxis of Tuberculosis;" "The Role of Municipal Sanitation in the Limitation and Eradication of Yellow Fever;" "On the Climatology of Mesopotamia," by John Sundberg, U. S. Consul, Bagdad, Asiatic Turkey. "On the Climatology of Puerto Rico," by Pedro José Salicrup, Secretary of the Section, New York City. Formal Address, by Albert L. Gihon, Medical Director U. S. Navy, Naval Hospital, Washington, D. C.

SECTION ON OBSTETRICS.

Address by Giles S. Mitchell, Executive President, Cincinnati, O. "Maternity Hospitals and their Results," by Joseph Price, Philadelphia, Pa. "The Axis Traction Principle in Obstetrics," by Joseph Hoffman, Philadelphia, Pa. "The Care of the Pregnant Woman in the First Half of Utero-Gestation," by W. H. Baker, Boston, Mass. "The Hemorrhages of Pregnancy and their Management," by J. O. Polak, Brooklyn, N. Y. "A Study of Placenta Prævia, Especially the Causes of the Hemorrhages," by Sarah Hackett Stevenson, Chicago, Ill. "The Management of the Placenta in Operations for Ectopic Gestation," by D. Tod Gilliam, Columbus, O. "The State of Obstetrics in General Practice," by Eliza H. Root, Chicago, Ill. "The Mechanism of Labor," by J. C. Rutherford, Providence, R. I. "The Induction of Premature Labor," by J. H. W. Chestnut, Philadelphia, Pa. "Aids to Easy Parturition," by A. J. C. Saunier, Chicago, Ill. "Occipito-posterior Positions and their Management," by F. C. Furgeson, Indianapolis, Ind. "The Therapeutic Application of Chloroform in Labor," by J. N. Upshur, Richmond, Va. "The Management of Some Cases of Difficult Labor," by Wm. H. Taylor, Cincinnati, O. "Forceps Delivery," by James Campbell, Hartford, Conn. "The More Frequent Use of Forceps in the Multipara," by Lyman A. Berger, Kansas City, Mo. "The Use and Abuse of the Forceps," by W. Frank Haehnlen, Philadelphia, Pa. "Symphyseotomy," by Henri Jacques Garrigues, New York City. "What has Surgery done for Modern Obstetrics," by Thomas Opie, Baltimore, Md. "Recent Surgical Advances and their Relation to Conservative Obstetrics," by W. Reynolds Wilson, Philadelphia, Pa. "Puerperal Peri-uterine Inflammations; their Pathology and Treatment," by J. Foster Scott, Washington, D. C. "The Pathology and Treatment of Puerperal Infection," by Edward A. Ayers, New York City. "Infection of the Kidneys after Labor," by Barton Cooke Hirst, Philadelphia, Pa. "Puerperal Eclampsia," by J. G. Cecil, Louisville, Ky. "Puerperal Eclampsia," by Theophilas Parvin, Philadelphia, Pa. "Induction of Labor and Accouchment Force in the Preventive Treatment of Eclampsia," by Charles Jewett, Brooklyn, N. Y. "Contribucion al estudio de la Septicemia puerperal," by Antonia Jose Amadeo, Maunabo, Puerto Rico. "A Study of Dystocia," by Salvador Garciadiego, Gaudalajara, Mexico. "A Method of Performing Rapid Manual Dilation of the Os Uteri and its advantages in the Treatment of Placenta Prævia," by Philander A. Harris, Paterson, N. J. "Nota Sobre la Expresion de la Vegiga en la Retencion de Orina Post Partum," by Sebastian Cuervo Serrano, Sancti-Spiritus, Cuba. "The Application of Graphies to the Fœtal Heart Sounds," by Hugh Hamilton, Harrisburgh, Pa. "Compression Uterina," by Jose Maria de Ita, Pueblo, Mexico.

SECTION ON MEDICAL JURISPRUDENCE.

"Medical Jurisprudence in its Relations to Dipsomania," by Edward C. Mann, Brooklyn, N. Y. "La Antropologia Criminal de Puerto Rico," by Jose Rodriquez Castro, Puerto Rico. "Present Status of Criminal Anthropology," by G. Frank Lydston, Chicago, Ill. "Hypnotism; does it Menace Public Weal?" by Fred C. Valentine, New York City. "The Doctor in Court," by D. R. Wallace, Terrell, Texas. "The Medico-Legal Aspect of Hypnotism." "The Question of Responsibility in the Extirpation of the Uterine Appendages in the Insane and in Minors." "The Legal Aspect of Abdominal Section for Penetrating Wounds of the Abdomen." "Medical Jurisprudence; its Aims, Importance, Status and Demands for Higher Recognition and Increased Facilities for Instruction by our Institutions of Learning devoted to fitting our Young Men for the Professions of Law and Medicine," by A. Garcelon, Executive President, Lewiston, Me.

SECTION ON DISEASES OF THE MIND AND NERVOUS SYSTEM.

Formal Address, by C. H. Hughes, Executive President of the Section, St. Louis, Mo. "The Gangliated Nervous System, and Some of its Diseases," by Chas. K. Mills, Philadelphia, Pa. Paper by William A. Hammond, Washington, D. C. "The Traumatic Psychoneurosis; its Relations to Paronoia, Epilepsy and Paretic Dementia," by J. G. Kiernan, Chicago, Ill. Paper by Theo. Diller, Pittsburgh, Pa. Paper by E. C. Seguin, New York City. "The Urine in Sexual Neurasthenia," by Chas. L. Dana, New York City. "Suppurative Meningitis and Myelitis, with Exhibition of Specimens," by Graeme M. Hammond, New York City. "The Disease of Inebriety and its Treatment," by T. D. Crothers, Hartford, Conn. "Chorea," by Charles Henry Brown, New York City. "Study of the Temperature in Twenty-five Cases of General Paralysis of the Insane," by Frederick Peterson, New York City. "The Present Status of Infantile Cerebral Palsies," by Frederick Peterson, New York City. "The Successful Management of Inebriety without Secrecy in Therapeutics," by C. H. Hughes, St. Louis, Mo. "Erotopathia: Morbid Erotism," by C. H. Hughes, St. Louis, Mo. "The Medical Treatment of Insanity," by Edward C. Mann, Brooklyn, N. Y. "Address of Welcome" (in Spanish), by Wm. A. Hammond, Washington, D. C. "Where the Newborn Baby Learned to Suck," by C. A. F. Lindorme, Atlanta, Ga. "The Treatment of Nervous Diseases in Sanitariums," by Jas. K. King, Watkins, N. Y. "The Influence of Alcohol upon the Human Powers and Constitution," by T. L. Wright, Bellefontaine, Ohio. "The Treatment of Cerebral Hemorrhage," by D. R. Brower, Chicago, Ill. "Neuro-Angio Paralysis and its Relation to Paretic Dementia," by Frank C. Hoyt, Clarinda, Iowa. Paper by S. Weir Mitchell, Philadelphia, Pa. Paper by E. C. Spitzka, New York City. Paper by O. T. Sherman, Boston, Mass. "Civil Service in American Hospitals for the Insane," by S. V. Clevenger, Chicago, Ill. "La Rengueara," by Daniel Guiterrez y Arango, Cali, Cauca, Colombia. "Paralisis Espastica Cerebral de los Adultos," by Manuel Carmona y Valle, City of Mexico, Mexico. "On the Prognosis of 'Railway Spine,'" by F. X. Dercum, Philadelphia, Pa. "The Nervous Symptoms of Storms," by Curran Pope, Louisville, Ky. "A Peculiar Type of Vaso-Motor Neurasthenia (The Pulsating Disease), with Report of and Operation for the Same," by Chas. L. Dana, New York City. "Curability of Inebriety," by J. G. Reed, Elmwood Place, Ohio. "Nutrition Against Stimulation," by W. H. Maxon, St. Louis, Mo.

SECTION ON DISEASES OF CHILDREN.

"The Most Successful Method of Treating Croup," by J. O'Dwyer, New York City. "The Teaching of Hygiene in Colleges and Public Schools," by F. Forchheimer, Cincinnati, Ohio. "Clinical Aspects of Infant Feeding," by E. P. Davis, Philadelphia, Pa. "Clinical Notes of Eruptive Fevers in Southern California," by W. A. Edwards, San Diego, Cal. "Infant Feeding," by T. M. Rotch, Boston, Mass. "The Time and Mode of the Introduction of the Exotic Diseases of Children into America," by J. Lewis Smith, New York City. "Physical Training of Public School Children," by J. Gardiner Smith, New York City. "Palmus," by L. C. Gray, New York City. "Enteroclysis in Intestinal Diseases of Children," by E. E. Graham, Philadelphia, Pa. "Bacteriological Diagnosis of Diphtheria," by H. C. Ernst, Boston, Mass. "Aphasia in Children," by F. Peterson, New York City. "On Milk" (No definite title), by Henry D. Chapin, New York City. "The Race Factor in Gastro-Intestinal Disease," by J. W. Byers, Charlotte, N. C. "The Treatment of Empyema in Early Life," by A. Brothers, New York City. "A Contribution to the Knowledge of Acute Primitive Entero-colitis During Low Infancy," by Joaquin L. Dueñas, Havana, Cuba. Paper by J. B. Deaver, Philadelphia, Pa. "The Production of Cow's Milk Designed for Infant Feeding," by Henry L. Coit, Newark, N. J. "The Proper Mode of Preventing and Treating Diphtheria, based on Recent Discoveries Relating to its Etiology and Pathology," by J. Lewis Smith, New York City. "The Normal Præcordia in Infancy and Childhood," by H. B. Whitney, Denver, Colo. "Intestinal Parasites Observed in the Island of Puerto Rico," by Antonio Amadeo, Manuabo, Porto Rico. "Immediate Percussion among Children," by Dr. Olinto, Porto Algre, Brazil. "Feeding of Children in Cuba during Infancy," by Joaquin L. Deuñas, Havana, Cuba. "Pertussis as it exists in the Rocky Mountains," by John M. Keating, Colorado Springs, Colo. "Types of Gastro-intestinal Disease Prevalent in New York, by Floyd M. Crandall, New York City. "Insane Disorders of Childhood," by J. Madison Taylor, Philadelphia, Pa. "Cirrhosis of the Liver in Children," by Wm. A. Edwards, San Diego, Cal. "The Artificial Feeding of Children in Mexico," by J. Ramon Icasa, City of Mexico, Mexico.

SECTION ON PHYSIOLOGY.

"American Physiology—Past, Present and Future," by Isaac Ott, Executive President of Section, Easton, Pa. "Pathology of Yellow Fever," by Joseph Jones, New Orleans, La. "The Effect of Lesions of Certain Parts of the Brain upon the Heat Processes," by E. T. Reichert, Philadelphia, Pa. "Heat Mechanism," by Bartolemeo Baculo, Naples, Italy. "The Globucidal Action of Blood Serum," by W. S. Carter, Philadelphia, Pa. "On the Absorption of Iron in the Animal body," by A. B. MacAl-

lum, Toronto, Canada. "Sur les Troubles Fonctionnelles Dues a la Chaleur," by J. B. DaLacerda, Rio de Janeiro, Brazil. "Automatism of Nerve Centers," by Prof. Samuel Wolfe, Philadelphia, Pa. "On the Proteolysis of Crystallized Phyto-globulin or Vitellin," by Prof. R. H. Chittenden, New Haven, Conn. "Innervation of the Venæ Portæ," by F. Mall, Chicago, Ill. "The Physiological Bases of Therapeutic Action—An Experimental Inquiry," by Thomas J. Mays, Philadelphia, Pa. "Some Observations on the Normal Growth and Muscular Development of the Human Body under Systematized Exercises," by Henry G. Beyer, Annapolis, Md. "'Conversazione' on Methods of Teaching and Demonstrating Physiological Subjects," by W. G. Thompson, New York City. "Hibernation and Allied States in Animals," by Wesley Mills, Montreal, Canada. "Sobre el Numero des los Globulos Rejos," by Dr. Jose G. Hernandez, Caracas, Venezuela. "La Force Musculaire Cher Les Indiens," by Dr. J. B. DeLacerda, Rio de Janeiro, Brazil. "On the Respiratory Center in the Medulla Oblongato," by Prof. Dr. J. Gad, Berlin. Germany. "The Analysis of the Gastric Juice for Some Diseases of the Stomach," by Hugh Hamilton, Harrisburgh, Pa "A Microscopical Study of the Living Nerve Cell During Stimulation," by C. F. Hodge, Hickory Ridge, Tenn. "Changes in Ganglion Cells from Birth to Death from Old Age," by C. F. Hodge, Hickory Ridge, Tenn. Paper to follow Dr. E. T. Richert's on "The Effect of Lesions of Certain Parts of the Brain upon the Heat Processes," by Isaac Ott, Easton, Pa.

SECTION ON OTOLOGY.

"Prevention of Deaf Mutism," by C. M. Hobby, Executive President of the Section, Iowa City, Ia. "Otacoustic Treatment; its History and Results upon the Deaf and Deaf Mutes," by J. A. Maloney, Washington, D. C. "The Phonograph in the Treatment of Deafness," by Johnson Elliot, Washington. D. C. "Opening the Mastoid Cell in Acute Inflammatory Middle Ear Disease," by L. D. Brose, Evansville, Ind. "Adenoids; A Contributive Factor in Aural Affections," by M. D. Lederman, New York City, N. Y. "Compressed Air, Vapors and Sprays in the Treatment of the Middle Ear, and Eustachian Tubes," by H. V. Würdeman. Milwaukee, Wis. "The Present Condition of Otology in Europe," by Lawrence Turnbull, Philadelphia. Pa "Pathological Conditions following Piercing of the Lobules of the Ear," by Max Thorner, Secretary of the Section, Cincinnati, O. "Craniometric Measurement of 500 Skulls in Relation to Aural Topographic Anatomy," by B. Alex. Randall. Philadelphia, Pa. "Description of Focussing Ear Trumpet," by Edmund D. Spear, Boston, Mass. "The Modern, Non-Surgical Treatment of Chronic Purulent Inflammation of the Middle Ear, with Indications for Surgical Interferference," by R. C. Hetlebower, Cincinnati. O. "The Treatment of Suppurative Processes of the Attic," by J. F. Fulton, St. Paul, Minn. "Preventable Deafness," by Chas. S. Turnbull, Philadelphia, Pa. "Contribution to the Study of Aural Syphilis," by Max Toeplitz, New York City. "On Localization of Sound," by C. Barck, St. Louis, Mo. "Indications for the Mastoid Operations and the Preferable Methods," by S. S. Bishop, Chicago, Ill. "Description of a Middle Ear Powder Blower, by R. D. Barret, St. Louis, Mo. "Chronic Disease of the Middle Ear; its Prognosis and Surgical Treatment," by Albert H. Tuttle, Cambridge, Mass. "Some Interesting Cases of Mastoid Disease," by S. MacCuen Smith, Philadelphia, Pa. "The Non-Surgical Treatment of Attic-Necrosis," by W. Cheatham, Louisville, Ky.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Paper by Robert Levy, Denver, Colo. "The Relation of Diseases of Rectum to Nasal Catarrh," by W. John Harris, St. Louis, Mo. "Electrolysis for the Relief of Certain Morbid Conditions of the Nasal Septum," by James E. Newcomb, New York City. "Myxosis of the Pharynx," by W. C. Glasgow, St. Louis, Mo. "The Easiest and Most Practical Means of Making Galvano-cauteries—Especially to Turbinate Hypertrophies," by Arthur G. Hobbs. Atlanta, Ga. Paper by W. H. Daly, Pittsburg, Pa. Paper by A. C. Wolfe, Columbus, Ohio. "The Use of Formate Soda in Laryngeal Disease," by E. L. Shurly, Detroit, Mich. Paper by G. B Lawrason, New Orleans, La. "The Utility of the Electro cautery Snare," by H. W. Loeb, St. Louis, Mo. Paper by Jonathan Wright, Brooklyn, N. Y. Paper by John N. McKensie, Baltimore, Md. "Reflex Epilepsy from Intra-nasal Disease," by John O. Roe, Rochester, N. Y. Paper by Charles H. Knight, New York City. Paper by Alexander MacCoy, Philadelphia, Pa. Paper by J. C. Mulhall. St. Louis, Mo. "A Case of Angioma of the Nasal Septum," by Frederick C. Cobb, Boston, Mass. "A Case of Elongation of the Epiglottis reduced by Operative Measures," by Price Brown, Toronto, Canada. Paper by Edward O. Clyer, Buenos Ayres, Argentine Republic. "Some of the Throat Conditions Observed in Gouty Subjects," by S. Solis-Cohen, Philadelphia, Pa. Paper by C. E. Bean, St. Paul, Minn. Paper by H. Holbrook Curtis, New York City. "The Ultimate Prognosis in Neglected Adenoid Hypertrophy," by D. Bryson Delevan, New York City. "Report of a Case of Myxo-Sarcoma of the Nasal Cavity," by C. W. Richardson, Washington, D. C. "Surgical Treatment of Empyema of the Maxillary Sinus," by Edward Obejero, Buenos Ayres, Argentine Republic. "Report on Cases of Tubercular Laryngitis Treated in Colorado Springs," by S. E. Solly, Colorado Springs, Colo. "Sarcoma of Naso-Pharynx, with Report of Case," by James E. Logan, Kansas City, Mo. "Alumnol in Diseases of the Throat and Nose," by J. Mount Bleyer, New York City. 'Some Forms of Nasal Reflexes with Report of Cases," by S. K. Merrick, Baltimore, Md. "Hysterical Aphonia and Deafness," by E. Fletcher Ingals, Chicago, Ill. "Clinical Notes of Cases of Tubercular Ulceration of the Larynx Treated by the Krauss Method at the Throat and Chest Clinic of the Emergency Hospital." by T. Morris Murray, Washington, D. C. "Indications and Opportunity for Opening the Mastoid Process," by Edward Obejero, Buenos Ayres, Argentine Republic. "On the Treatment of Empyema, with Due Regard to Normal Pulmonary Contractibility," by Dan Millikin, Hamilton, Ohio.

SECTION ON ANATOMY.

"Anomolies of the Larynx as seen by the Specialist," by Wm. T. Cathell, Baltimore, Md. Paper by T. Griswold Comstock, St. Louis, Mo. Paper by R. B. Gilbert, Louisville, Ky. "The Diaphragm," by H. E. McIntire, Hudson, Wis. "A Note on the Occurrence of the Scapulo Clavicular Muscle," by Robt. S. Moody, New Haven, Conn. "Mallet Finger," by Robt. T. Morris, New York City. "Laws of the Growth of the Cell applied to Human Anatomy," by Robert Reyburn, Washington, D. C. Paper by R. Winslow, Baltimore, Md. "On the Presence of Linguatula Rhinosia in the United States," by C. W. Stiles, Washington, D. C. "Nerve Anastomosis," by A. C. Bernays, St. Louis, Mo. Paper by Geo. A. Burgham, Toronto, Canada. Paper by E. B. Kenner, St. Louis, Mo. Paper by Thos. J. Lee, Minneapolis, Minn. Paper by Chas. S. Minot, Boston, Mass. Paper by John C. Munro, Boston, Mass. Paper by J. T. Newman, New Orleans, La. Paper by Geo. A. Piersol, Philadelphia, Pa. Paper by James B. Prichard, St. Louis, Mo. "A Part of the Anatomy of the Velum Pendulum Palati," by Thos. F. Rumbold, San Francisco, Cal. Paper by D. F. Rodgers, Topeka, Kan. Paper by W. R. Stokes, Baltimore, Md. Paper by Prof. A. H. Tuttle, University of Virginia, Va. "The Human Hand," by Geo. W. West, Washington, D. C. Paper by Geo. W. Wilcox, Augusta, Ga. Paper by W. P. Wilson, Philadelphia, Pa. Paper by Edwin Bentley, Little Rock, Ark. Paper by Henry C. Boeming, Philadelphia, Pa. Paper by Elizabeth R. Bundy, Philadelphia, Pa. Paper by E. F. Clapp, Iowa City, Iowa. Paper by J. W. Hartigan, Morgantown, W. Va. Paper by Wm. Kraus, Memphis, Tenn. Paper by Rudolph Matas, New Orleans, La. Paper by J. W. Perkins, Kansas City, Mo. "Surgical Anatomy of the Appendix Vermiformis with some Anatomical Abnormalities Observed," by R. H. Plummer, San Francisco, Cal. Paper by E. S. Herus, Lebanon, O. "The Dissecting Room," by E. W. Holmes, Philadelphia, Pa. "The Relations of the Heart and Lungs to the Anterior Chest wall, as determined by Composite Photograph," by Irving I. Haynes, New York City. "Bone an Organized Substance," by Geo. F. Koehler, Portland, Oregon. "Craniometric Measurement of 500 Skulls in Relation to Aural Topographic Anatomy," by B. Alexander Randall, Philadelphia, Pa. "A Case of Supernumerary Nipples, with Remarks upon and Literature of the Subject," by Albert Pick, Manchester, N. H. "On the Zona Radiata of the Felostean Ovum," by Jacob Reichard, Ann Arbor, Mich.

SECTION ON THERAPEUTICS.

Paper by Edward Randall, Galveston, Tex. "The Treatment of Scarlet Fever by Chloral Hydrate," by James C. Wilson, Philadelphia, Pa. "A Plea for Physiological Remedies," by Simon Baruch, New York City. "Treatment of Chronic Catarrh and Allied Conditions of Lowered Hydrochloric Acidity," by D. D. Stewart, Philadelphia, Pa. "The Physiological Actions of Alcohol," by David Cerna, Galveston, Tex. "The Treatment of Neurasthenia with Special Reference to the Best Cure," by F. X. Dercum, Philadelphia, Pa. "The Advantages of Amorphous Phosphorous over the Officinal Form," by E. I. Richardson, Philadelphia, Pa. "Venesection in Treatment of Engorgement and Dilation of Right Side of the Heart," by I. E. Atkinson, Baltimore, Md. "The Use of Nitro-Glycerin in Arterio-Sclerosis," by T. G. Ashton, Philadelphia, Pa. Paper by Edw. Martin, Philadelphia, Pa. Formal Address by Hobart A. Hare, Executive President, Philadelphia, Pa. "The Philosophy of Therapeutics," by L. B. Anderson, Norfolk, Va. "The Antipyretic Action of Alcohol," by A. B. Simmons and R. J. Winn, Savannah, Ga. "Some Views Regarding the Philosophy of Drug Action," by J. W. McLaughlin, Austin, Tex. "The Treatment of Leprosy," by Richard H. L. Bibb, Satillo, Mexico. Paper by Fernando Altamirano, City of Mexico, Mexico. "The Clinical Import of Koumyss," by J. Mount Bleyer, New York Ctiy. "The Treatment of Exophthalmic Goitre based on Forty-five Consecutive Cases," by A. D. Rockwell, New York City. "Etude sur un Moyen d'assurer l'efficacite du copaiba daus la medication suppressive de la blererrhagie urethrale," by L. T. C. Lamothe. Port au Prince, Haiti. "Action physiologique de quelques plantes bresiliennes de la famille des Menespermacles," by J. B. Da Lacerda, Rio de Janeiro, Brazil. "Une plante Convulsevante du Bresil," by J. B. Da Lacerda, Rio de Janeiro, Brazil. "Pathology and Treatment of Gout," by James Tyson, Philadelphia, Pa. "Contribution to the Therapeutics of Yellow Fever," by Pedro Peñuelas, Havana, Cuba. "Some Points in the Treatment of Uric Acid Diathesis," by F. E. Stewart, Watkins, N. Y. "A Contribution to the Treatment of Diabetes Mellitus," by Solomon Solis-Cohen, Philadelphia, Pa. "The Value of the Bath in some Sthenic Conditions, Particularly Typhoid Fever," by Simon Baruch, New York City. "The Indications which should Govern the Employment of the Several Anæsthetics," by H. C. Wood, Philadelphia, Pa. "Electricity, its Use in Medicine," by F. Schavoir, Stamford, Conn.

SECTION ON MILITARY MEDICINE AND SURGERY.

Address of the Executive President, GEORGE M. STERNBERG, Surgeon-General U. S. Army.

"Laparotomy in Gunshot Wounds," by P. S. Conner, Cincinnati, Ohio. Paper by Hunter McGuire, Richmond, Va. Paper by Col. Joseph R Smith, Med. Director, Headquarters Department of Cal., San Francisco, Cal. Paper by Wm. A. Hammond, Washington, D. C. "Are Projectiles from Portable Hand Weapons Sterilized by the Act of Firing? Can a Septic Bullet infect a Gun-shot Wound?" by Capt. Louis A. La Garde, Chicago, Ill. "The Place of Selection and Methods of Amputation, with Reference to the most useful Artificial Appliances," by Stephen Smith, New York City, N. Y. Paper by Brev't Lt. Col. A. A. Woodhull, Surg. U. S. A., Hot Springs, Ark. "Personal Experience in the results of Good and Bad Sanitation in the Confederate Army," by Bedford Brown, Alexandria, Va. "The Causes and Origin of Continued Fevers in Naval Service," by C. A. Siegfried, Surg. U. S. Navy, Newport, R. I. Paper by N. Senn, Chicago, Ill. Paper by John Homans, Boston, Mass. "Apresstos de Campamento de uso en Cuba por los Medico Militares," by Felix Estrada Catoyra, Havana. Hospital Corps Drill by Detachment, under the command of Major Van R. Hoff, Surgeon, U. S. A. "Exhibition of a Field Hospital Complete with Equipment now in use in the U. S. Army. "First Aid to the Wounded and transportation of the Wounded from the Battlefield and Field Hospitals." Visit to the Army Medical Museum. (*a*) Inspection of Collection. (*b*) Inspection of Library of the Surgeon General's Office.

Demonstration of U. S. Hospital Corps Drill.—The following is the order of the exercises that will be carried out under the command of Major John Van R. Hoff, Surgeon U. S. Army, at 3 P.M., Wednesday, September 6, in the Section of Military Medicine and Surgery of the Pan-American Medical Congress:

1. Inspection of hospital corps detachment.

2. Inspection of the field hospital, including field appliances, method of administration, etc. [The field hospital will be open during the session of the Congress, and all delegates are cordially invited to inspect it.]

3. Bearer drill, with hand litter. Bearer drill, with extemporized litter; blanket, coat, rifle. Lifting, lowering and carrying patients by four, three, two, and single bearers; passing obstacles; with ambulance.

4. First aid drill; the application of temporary dressings; utilizing materials for splints, etc., ordinarily at hand on the battle field.

SUBJECTS.

A. Fracture of right clavicle.
B. Dislocation of left shoulder.
C. Fracture (compound) of right arm, middle third.
D. Fracture of left forearm, near elbow.
E. Hemorrhage from right femoral artery (middle third of thigh).
F. Flesh wound of scalp (large) over right parietal bone.
G. Perforating gunshot wound of left chest.
H. Gaping knife wound, right abdomen.
I. Fracture (compound) of left femur, lower third.
J. Fracture of right tibia, middle third.
K. Sunstroke.
L. Resuscitation of apparently drowned.

5. Assembly of squads, and return of litters.
6. Tent pitching and striking.
7. Formation and dismissal of detachment.

SECTION ON GENERAL MEDICINE.

Paper by Manuel Carmona y Valle, City of Mexico, Mexico. Formas del Impaludismo i Medico de reconvertes, by Francisco A. Risguez, Caracas, Venezuela. Paper by E. L. Shurly, Detroit, Michigan. Paper by J. C. Wilson, Philadelphia, Pa. Paper by Charles G. Stockton, Buffalo, N. Y. Paper by F. Peyre Porcher, Charleston, S. C. Paper by J. H. Musser, Philadelphia, Pa Paper by George Dock, Ann Arbor, Mich. "Cold Steel as an Antirheumatic," by W. K. Vance, Bristol, Tenn. "Cholera Asiatica—1892," by J. D. Burch, Aurora, Texas. "Facts in Stethoscopic Percussion," by Henry Sewall, Denver, Col. Paper by W. C. Christopher, Chicago, Ill. "A Study of Some Cases of Chronic Diabetes," by N. S. Davis, Jr., Chicago, Ill. Paper by C. S. Bond, Richmond, Ind. "Typhoid," by W. C. Dabney, (University of Virginia) Virginia. "A Case of Acromegalia in a Giantess," by Woods Hutchinson, Des Moines, Iowa. Paper by D. W. Prentiss, Washington, D. C. Paper by R. L. Miranda, New York City. Paper by William Osler, Baltimore, Md. "The Value of Rest as a Therapeutic Agent in Chronic Pulmonary Tuberculosis," by Karl von Ruck, Asheville, N. C. "A New Anerobic Bacillus of Malignant Œdema," by F. G. Novy, Ann Arbor, Mich. 'Progressive Pernicious Anemia," by Judson Daland, Philadelphia, Pa. "On the Occurrence of a Form of chronic Bright's Disease other than Typical Fibroid Kidney without Albuminuria," by D. D. Stewart, Philadelphia, Pa. "De la Buba," by Drs. Luis Razetti N. Guardia. Caracas, Venezuela. "La Folie cher le negre," by J. B. Da Lacerda, Rio de Janeiro, Brazil. "La Cause de la Fievre jaume," by J. B. Da Lacerda, Rio de Janeiro, Brazil. "A New Disease of the West Indies," by Cuthbert Bowen, Barbados, West Indies. "The Bacteriology of Dengue Fever," by J. W. McLaughlin, Austin, Texas. "Culture of Anerobic Bacteria," by F. G. Novy, Ann Arbor, Mich. "Consideraciones sobre dos Casos de Anemia por Ankylostoma duodenale observados cual Hospital Victor Manuel de Lima." by J. B. Agnoli, Lima, Peru. "A Contribution to the Study of Prolonged Intermittent Fever," by David Lobo, Caracas, Venezuela. "The Nature of the Germicidal Constituent of the Blood Serum," by Victor C. Vaughn, Ann Arbor, Mich. "On Vaso-Motor Ataxia," by J. Solis Cohen, Philadelphia, Pa. "Recent Experiences in Croupous Pneumonia with Observations on Treatment by Subcutaneous Inspections of Saline Solutions," by R. F. Cunningham, Birmingham, Ala. "Cholera; its Diagnosis, Prognosis and Treatment," by J. M. Hurley, San Bernardino, California. "Colera Morbo Asiatico," by Santiago Hernandez, Santa Clara, Cuba. "The Importance of Eliminating Pelvic Diseases in General Diagnosis," by Mary H. McLean, St. Louis, Mo. "Clinical Notes on Amœbic Dysentery," by H. A. West, Galveston, Texas. "Some American Ideas about Chronic Diarrhœa," by Ephraim Cutter, New York City. "Tratamento medico del vomito negro," by Segundo Bellver Mateo, Havana, Cuba. "The Principles of Immunity and Cure in the Infectious Diseases," by Victor C. Vaughn, Ann Arbor, Mich. "Forced Respiration—Fell Method—A Plea for its General Adoption in Hospital and Naval Practice," by Geo. E. Fell, Buffalo, N. Y. "Nutrition vs. Stimulation in the Treatment of Chronic Diseases," by W. H. Maxson, California. "The Complicating Conditions Associated Diseases and Mortality Rate in Erysipelas," by James M. Anders, Pennsylvania. "Filaria," by G. DeSaussure, South Carolina.

Conference of State Boards of Medical Examiners.—The following circular has been issued:

HELENA, MONTANA, August 1, 1893.

Secretary State Board of Medical Examiners of ——

Dear Doctor:—At the recent meeting of the National Conference of State Medical Examining and Licensing Boards, held at Milwaukee, June 7, 1893, it was the expressed desire of the members present that during the present year all State Boards should be enrolled as members of the Conference, and that the next meeting be made one of more than ordinary interest and profit to us in our work of elevating the standard of medical education.

It is also desirable that there be established closer relations between the various Boards so that there may be an interchange of ideas, and an active coöperation in all that pertains to higher medical education.

In order to bring this about there is much to be done and immediate action should be taken.

As secretary and treasurer of the conference I earnestly request your aid and assistance in accomplishing the desired end. I therefore ask that the members of your Board, if not already enrolled, become members at once by sending in their applications and first annual fee of $2.00.

That the Records of the Conference may be made complete, kindly send me as soon as possible copies of your Medical Practice Acts, Reports, (as complete files as convenient), circulars or other documents that will aid in tabulating and recording the work of the various Boards. These reports, etc., will be carefully kept on file for future use and become the foundation of a history of State Medical Examining and Licensing Boards and the work done.

From time to time you will be communicated with upon matters of mutual interest, and I trust you will, in turn, keep this office informed of all matters of importance, by communications, reports, circulars, etc.

We have a most important duty to perform, and it will succeed if all will enter into it with zeal and determination.

The next meeting will be held in San Francisco during the meeting of the American Medical Association.

Very truly yours, C. K. COLE, *Secretary.*

DOMESTIC CORRESPONDENCE.

Analysis of "Cerebrine."

To the Editor:—I send you this very valuable contribution of Prof. Delafontaine (whom you must know as one of our best analytic chemists), on the chemical composition of Hammond's cerebrine and medulline. This examination was made largely at my suggestion. I found what I supposed was the physiologic action of nitro-glycerin by internal administration, and so reported to Mr. Baker, and he suggested that an examination be made of it by Prof. Delafontaine, which has been done, and I hope you will publish the results in your journal. Yours truly,

D. R. BROWER.

Some time ago, Mr. Baker of the firm of Gale and Blocki asked me to make a chemical investigation of a sample of a drug in a small triangular blue glass bottle, labeled "Sterilized Solution of Cerebrine, prepared solely by Columbian Chemical Co., New York," with a fac-simile of William A. Hammond's signature in red ink across the label.

On experimenting on himself with that drug, Mr. Baker felt the rapid and powerful effect of a more than full dose of nitro-glycerin, which made him strongly suspicious of the presence of the latter in that alleged cerebrine. Having put five drops of that fluid on my tongue, I felt the same symptoms described by Mr. Baker, followed by the same occipital headache.

Then I proceeded to the chemical examination as follows: The excipient in that solution is chiefly glycerin. A part of it was treated with mercuric chloride, which gave but a faint flocculent precipitate. No change with potassium iodo mercuriate. Therefore absence of ptomaines or other organic bases. To another part of the liquid were successively added diphenylamine hydrochloride and strong sulphuric acid, which developed the intense deep blue color characteristic of *nitric acid* or *nitrates.*

A few drops mixed with ferrous sulphate and sulphuric acid produced the brownish color also characteristic of nitrates. On the other hand, sulphanilic acid used in conjunction with dilute hydrochloric acid and naphthylamine hydrochloride failed to show the presence of nitrous acid or its salts. Now, one of the properties of nitro-glycerin is that it is decomposed by alkalies into a number of compounds, among which are nitric and nitrous acid.

Some of that combine was saponified by caustic soda and the excess of alkali sursaturated. One-half of the fluid gave with diphenylamine the nitrate reaction. The other half showed the beautiful red color due to tritrites when treated with sulphanilic acid and naphthylamine. Thus it is seen that the cerebrine solution is also saponified by caustic soda with the production of nitric and nitrous acid. I have also experimented on an unbroken package of *medulline* prepared by the same concern. Physiologically and chemically the results were the same, so that it is unnecessary to describe them.

On the other hand, a sample of cerebrine made by another firm proved to be physiologically inert and utterly failed to give any of the color reactions described in the foregoing lines.

The chemical reactions of Hammond's cerebrine and medulline fully agree with the physiological effects in that they point out the presence of nitro-glycerin, or some very closely allied product which does not preëxist in the ox brain. Personally, I do not believe in some putrefactive process generating a nitrate in the Hammond's product. The absence of ptomaines excludes that theory.

M. DELAFONTAINE.

Chicago, Aug. 18, 1893

MISCELLANY.

He reads the Journal.—The editor of the *Pittsburgh Medical Review* reads the JOURNAL carefully, and a recent number of that valuable periodical points out a typographical error that escaped the eye of the proof reader of the JOURNAL some numbers back. He does well when he reads the JOURNAL. People are always improved by reading carefully the excellent original papers exclusively furnished the JOURNAL. The medical news, always fresh, crisp and sparkling as it appears in the JOURNAL, refreshes the reader like a mid-summer draught from a cool natural fountain, and even advertisements when they appear in the JOURNAL have an added charm and an interest to members of the ASSOCIATION which they can not take in advertisements when they appear elsewhere.

Sir B. W. Richardson.—Dr. Richardson, the well known sanitarian and editor of *Asclepaid*, has been knighted by the Queen of England, among those receiving "birthday honors." Dr. Charles Cameron has been made a baronet on the same occasion.

Local Anaesthesia from Aristol.—Several observers have called attention to the soothing effects of aristol when applied to painful exposed surfaces. This has been especially noted when aristol has been employed as a dressing for burns, bed-sores, and blisters, or for irritating ulcers. At the same time, the analgesic action of aristol does not interfere with the strong healing power necessary to a prompt cicatrization of denuded areas, while it seems to favor the growth of normal granulating surfaces. It is not easy to say just how far the power of aristol as a local anæsthesia may be made useful in the operation of minor surgery, but some recent experiments point to a probable new field of usefulness for this remedy in the direction cited. The following paragraph from the *Kansas Medical Journal* is quite significant as showing that the advantages of aristol as an analgesic have not passed unobserved: Dr. S. M. Riggs has made some interesting experiments in the use of aristol as a local anæsthetic. A hypodermic injection of a solution in glycerine was made on a kitten with the result of complete local anæsthesia. The animal made no resistance to a cutting operation and was apparently unaware of being injured. The advantages of using as a local anæsthetic the same drug which was afterward to be applied to the operation wound as a cicatrisant would of course, be very important.

The William F. Jenks Memorial Prize.—The third triennial prize of five hundred dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "Infant Mortality during Labor, and its Prevention." The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children," and that "the Trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said Trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia."

The prize is open for competition to the whole world, but the essay must be the production of a single person.

The essay, which must be written in the English language, or if in a foreign language must be accompanied by an English translation, should be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., before January 1, 1895, addressed to Horace Y. Evans, M.D., Chairman of the William F. Jenks Prize Committee.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

College of Physicians of Philadelphia, N. E. corner Thirteenth and Locust streets, James V. Ingham, Secretary of the Trustees.

Eleventh International Medical Congress.—In consequence of the sanitary condition of several of the European States, which prevents their medical men leaving home, and following the advice of many of the most prominent scientists, both Italian and foreign, the executive committee of the above Congress has decided, by a large majority, to postpone the meeting till April, 1894.

The exact date of the inauguration will soon be fixed.

THE PUBLIC SERVICES.

Naval Delegates.

Secretary Herbert has detailed Medical Director A. J. Gorgas, Surgeon C. A. Siegfried, Surgeon H. G. Berger and Passed Asst. Surgeon D. M. Guiteras as representatives of the Navy Department at the Pan-American Medical Congress which is to meet in Washington, D. C.

Army Delegates.

Special orders from the Adjutant General's Office, Washington, D.C., dated August 18, detail four officers to represent the Medical Department of the Army at the Congress. They are Colonel Bernard J. D. Irwin, assistant Surgeon General; Lieutenant Colonel Dallas Bache, deputy Surgeon General; Major David L. Huntington, Surgeon, and Major Charles Smart, Surgeon.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from August 12, 1893, to August 18, 1893.

Lieut.-Col. JOHN H. JANEWAY, deputy Surgeon General, retirement from active service August 12, 1893, by operation of law, under the provisions of the Act of Congress approved June 30, 1892, is announced. By direction of the President.

First Lieut. HARLAN E. MCVAY, Asst. Surgeon (San Carlos, A. T.), is granted leave of absence for one month, to take effect when relieved by another medical officer, with permission to apply for an extension of fifteen days.

Major HENRY R. TILTON, Surgeon U. S. A., is granted two months' leave of absence, when relieved from duty at Fort Wayne, Mich.

First Lieut. JAMES D. GLENNAN, Asst. Surgeon U. S. A., is granted leave of absence for twenty days, to take effect upon the conclusion of his examination for promotion.

Navy Changes. Official list of changes in the Medical Corps of the U. S. Navy, for the week ending August 19, 1893.

Surgeon A. M. MOORE and P. A. Surgeon C. W. RUSH, placed on retired list.

Asst. Surgeon R. M. KENNEDY, promoted to P. A. Surgeon.

Medical Director J. H. CLARK, Medical Inspector C. H. WHITE and Surgeon J. L. NEILSON, ordered as members medical examining board.

P. A. Surgeon M. F. GATES, from Naval Hospital, Portsmouth, and recorder naval medical examining board, September next.

P. A. Surgeon A. R. WENTWORTH, ordered to Naval Hospital, Portsmouth, N. H.

Medical Director A. C. GORGAS, Surgeons C. A. SIEGFRIED and H. H. BERGER, ordered as delegates to Pan-American Medical Congress.

Surgeons B. S. MACKIE and L. G. HENNEBERGER, to Naval Academy to examine applicants for admission to Naval Academy.

LETTERS RECEIVED.

(A) Adams, S. S., Washington, D. C.; Alden, C. H., St. Paul; (B) Buckley, E. W., St. Paul; Bishop, S. S., Chicago; Boyers, J. S., Decatur, Ind.; Breaky, J. R., Alma Center, Wis.; (C) Christian, E. A., Pontiac, Mich.; Cone, Andrew, New York, N. Y.; Cole, R. Beverly, San Francisco; Chancellor, E., St. Louis; Cobb, Myron W., South Bend, Ind.; (D) Duhring, L. A., Philadelphia; (F) Ferguson, A. H., Winnipeg, Manitoba; (G) Gibbons, Henry, Jr., San Francisco; (H) Hughes, C. H., St. Louis; (J) Johnson, W. J., Chicago; Jones, Thos. R., Milwaukee; (L) Love, I. N., St. Louis; Laidley, L. H., St. Louis; (M) McKelway, Geo. I., Philadelphia; Moulin, E., Rome, Italy; Malsbary, G. E., Cincinnati; McClary, C. E., Syracuse, N. Y.; (P) Pepper, Wm., Philadelphia; Parke, Davis & Co., Detroit, Mich.; (R) Reymond, J. P., Kansas City; Reed, C. A. L., Cincinnati; (S) Smith, A. Noal, Dover, N. H.; (T) The Ruggles-Gale Co., Columbus, Ohio; (V) Vetter, J. C. & Co., New York, N. Y.; (W) Woodbury, Frank, Philadelphia; Wyckoff, R. M., Brooklyn, N. Y.; Waukesha Lithia Spring Co., Waukesha, Wis.